

SINCLAIR user
£1
DECEMBER 1986 No. 57
HACKING THRU THE SOFTWARE JUNGLE
TARZAN did we go ape?
INSIDE
HIT SQUADS
CODING THE FUTURE
BUILD A ROBOT ★ IKARI WARRIORS COMPO
COMPLIMENT ★ ART STUDIO OFFER ★ BUDGET BIGGIES
FAIRLIGHT II AUTHOR ★ THE WRITE STUFF ★ WHICH COMPILATION?
STAR GLIDER ★ SPACE HARRIER ★ ACADEMY

GREMLIN

ALWAYS AHEAD

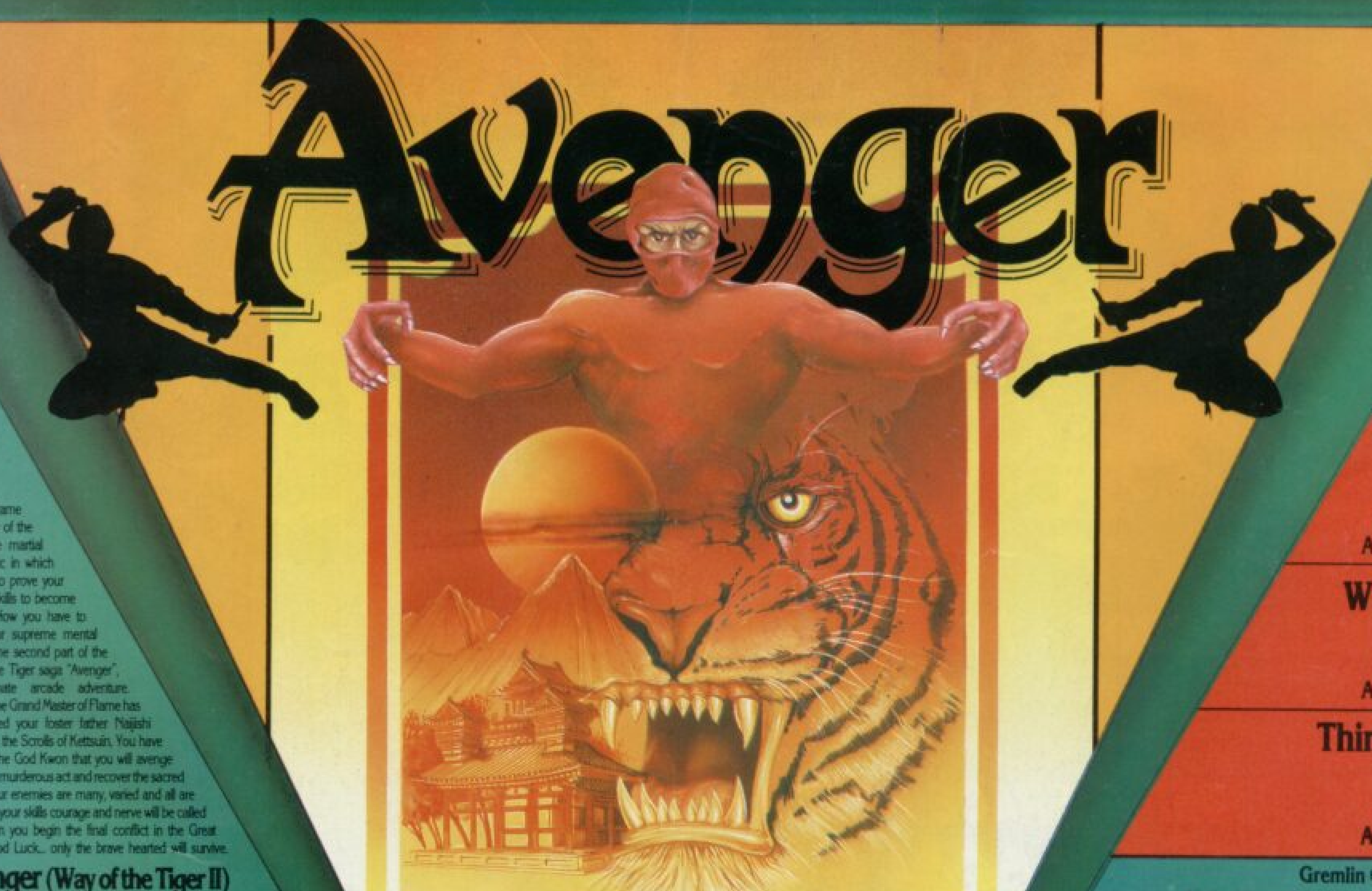
Footballer of the Year

The game to answer every boyhood dream – the chance to make it to the very top of football stardom. Starting on your path to glory as a 17 year old apprentice with a Fourth Division team and only £500 and 10 goal scoring cards in your pockets, the footballing world is at your feet. Adopt the identity of a professional footballer and develop a career through the ups and downs of match days, transfer deals and injuries etc. Display your talents in Football League, U.E.F.A., F.A. and Milk Cup games and then if you're good enough the ultimate accolade of your sport, the Footballer of the Year Award.



Footballer of the Year
C16 + 4 — £6.95
MSX Spectrum 48K — £7.95
Amstrad, BBC/Electron Atari CBM 64/128 — £9.95

Avenger
C16 +4 CBM 64/128 MSX Spectrum 48K Amstrad — £9.95



First came "The Way of the Tiger" the martial arts classic in which you had to prove your physical skills to become a Ninja. Now you have to prove your supreme mental agility in the second part of the Way of the Tiger saga "Avenger", the ultimate arcade adventure. Yaemon the Grand Master of Flame has assassinated your foster father Naijishi and stolen the Scrolls of Kettsuin. You have sworn to the God Kwon that you will avenge Yaemon's murderous act and recover the sacred scrolls. Your enemies are many, varied and all are deadly. All your skills courage and nerve will be called upon when you begin the final conflict in the Great Keep. Good Luck... only the brave hearted will survive.

Avenger (Way of the Tiger II)

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C16
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Available

Way of
C16
£9
Available

Thing on
C16
£6
Available

Gremlin Graphics
Alpha House, 10 Carver Street,

Available November


GREMLIN
OF THEIR TIME
Future Knight Trailblazer
C16 + 4 MSX Spectrum 48K
£6.95 £7.95
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Amstrad
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Disk
Amstrad Disk
CBM 64/128
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Arise Sir Randolph to take up the challenge of death that has befallen the fair maid Amelia, held in the evil clutches of Spebott the Terrible. Acting upon an inter-dimensional distress signal from the galactic cruiser SS Rustbucket, don your Omnibott Mark IV attack suit and venture forth in pursuit of your beloved's captors. Defend yourself nobly against the Berzerko Security droids. Fight your way through 20 gruelling levels onto the planet's surface into Spebott's castle where the fate of Amelia lies with the outcome of your mortal combat with the awesome Henchodroid. Is there any gallantry and bravery left in this modern day universe?
Available November
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TRAILBLAZER
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November
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Software Ltd.,
Sheffield S1 4FS. Tel: (0742) 753423
Thunder into the unknown at a breakneck speed, pushing your reflexes to their limits in this definitely exhilarating journey that's not one for the fainthearted. Roll left, roll right avoiding the endless chasms of doom that lay in and around the squares of mystery. Squares that will sometimes slow your progress, on occasion with fatal consequences and sometimes speed up unexpectedly or make you jump automatically. Keep a keen eye on the clock as the quicker you complete your task the higher will be your bonus. CBM 64 version is an amazing 2 player simultaneous game. Amstrad Disc version contains extra features.
Trailblazer
Available November

C · O · N · T

SINCLAIR user

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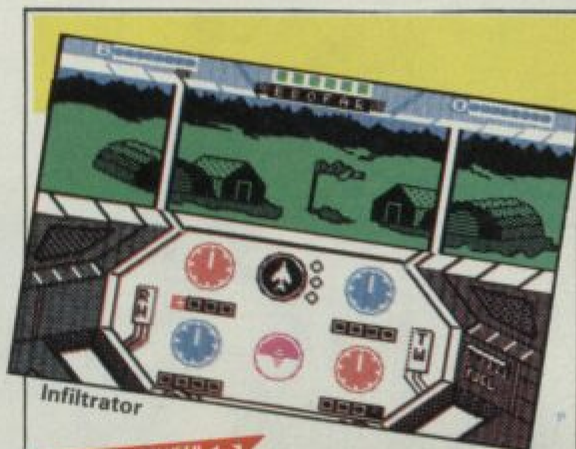
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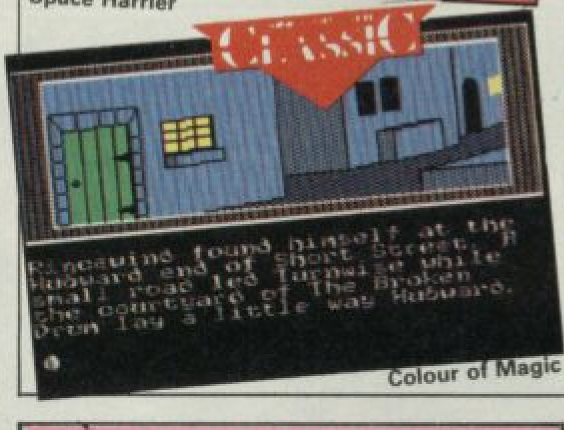

Infiltrator



Starglider



Space Harrier



Colour of Magic

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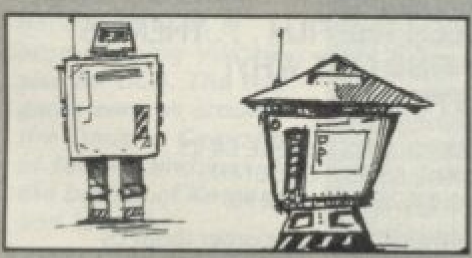
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MICRO ME

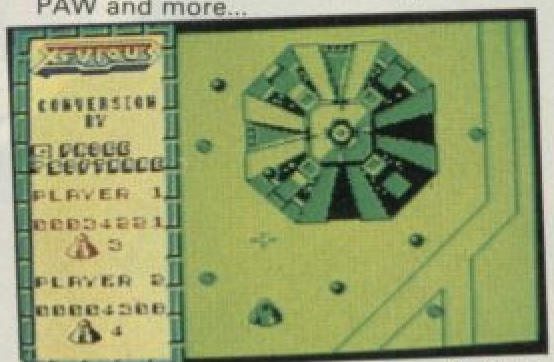


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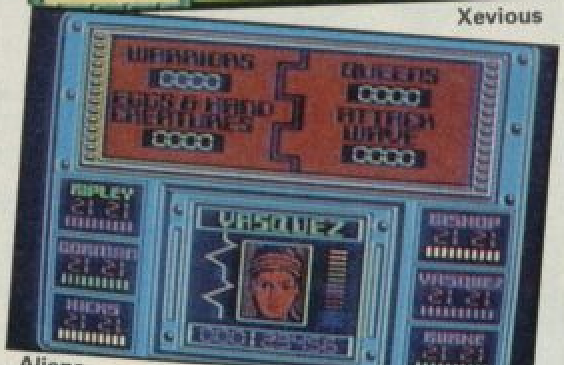
RCENARIES



PREVIEWS



Xevious



Aliens

COVER SMASH

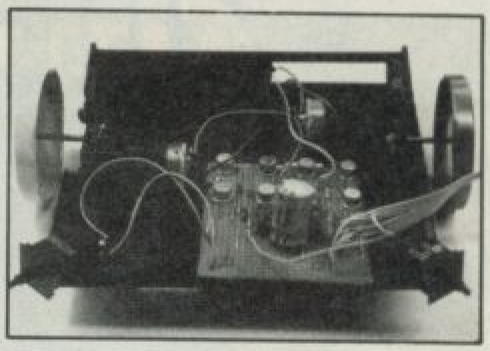


COMPETITIONS

NEW FEATURE

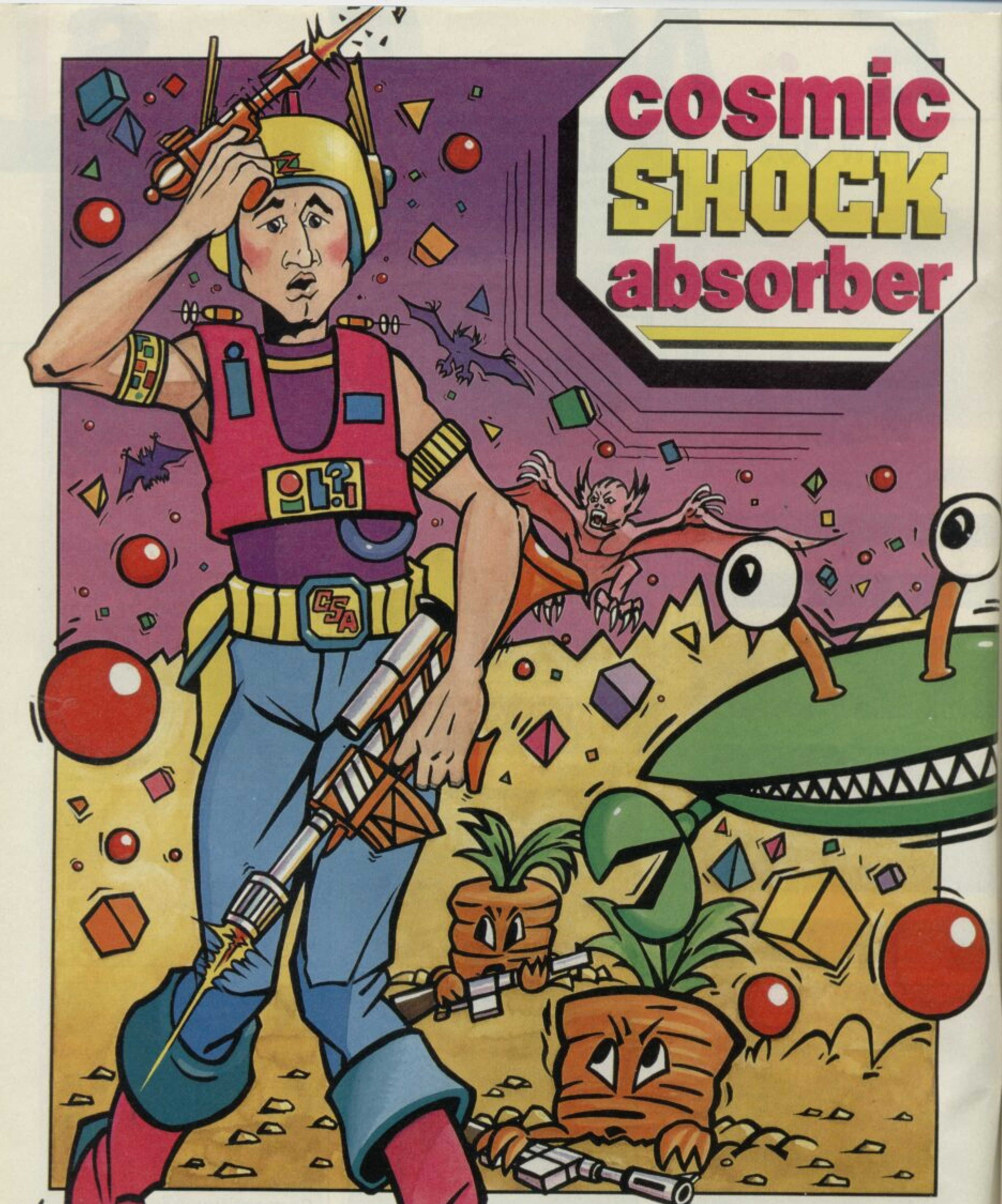
FEATURES

DIY ROBOT



PRINTOUT

REGULARS


cosmic
SHOCK
absorber

UNDER RAPS!

● **Astros Products, a new programming team, is producing** Samurai **for CRL. Pit the wits of your samurai and ninjas against a team of assorted buddist monks**

● **Kevins Toms of** Football Manager **fame, after much prevarication, has nearly finished his magnum opus of a strategy game** President. **Word is it'll be released by addictive Games!**

● **Design Design is putting the finishing touches to** Kat Trap **for Domark. It's due out just before Christmas**

● **Ultimate, the company which brought you** Alien 8 **and** Knightlore, **and very little since is the most likely candidate to convert Activision's latest coin-op acquisitions,** Enduro Racer **and** Quartet.

● **Adventuresoft is programming** Temple of Terror **and Isaac Asimov's** Kayleth **for US Gold**

● **Andromeda, fresh from forays with** The Last Ninja, **is producing** Crystal Castles **for US Gold**

● ***David Jones, is producing*** *Stormbringer* ***another arcade adventure on Mastertonic's budget label. His past hits include*** *Spellbound, Knightyme* ***and*** *Finders Keepers.*

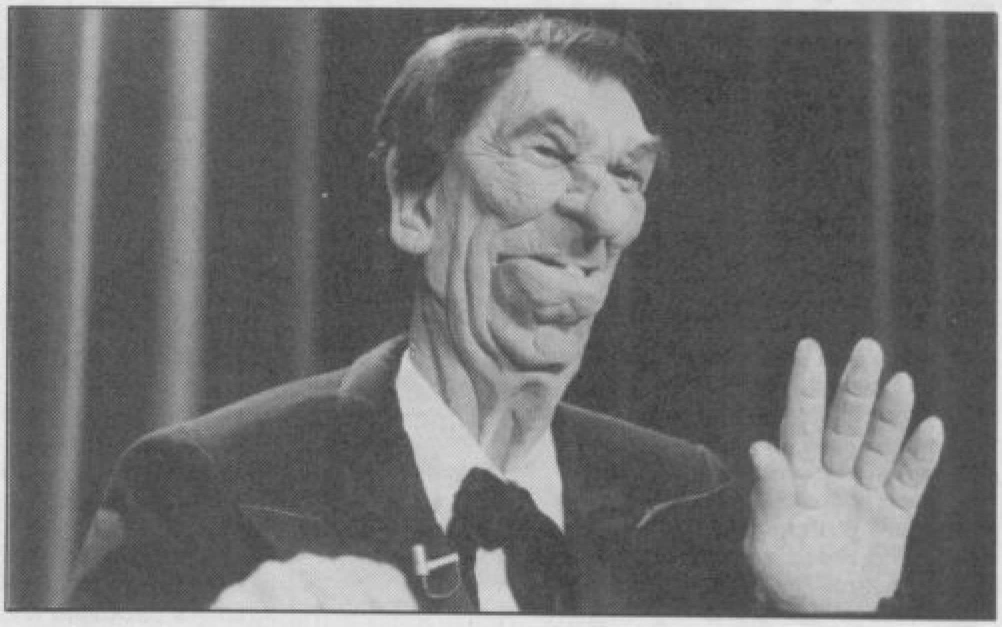
● ***Robert Smith, best selling author of*** *Arnhem* ***and*** *Desert Rats,* ***from CCS, is programming*** *Vulcan,* ***also for CCS. The war game centres around the Tunisian Campaign of 1942-43 and includes the battles of Kassarine and Mareth***

SPITTING GAME PLAN

You may yet see Ronald Regan or Madonna on your micro!

Spitting Image Productions is searching for a software house to write a game based on its satirical puppet hit TV show.

The company isn't sure whether the game would be in the arcade or adventure mould but John Blair, one of its directors says: "We have had discussions with a number of software houses but haven't given the licence to anyone yet."



Blair went on to say that Spitting Image would have a 'tight' control over any game and would dictate the way in which it would appear.

It won't appear this year but with plans to produce another *Spitting Image* television series, and a spin-off programme featuring the royal family, the game could be lanuched late next year.

SINCLAIR JINX STRIKES

The Spectrum 128K+2 may have slipped quietly into the retail stores but the Sinclair jinx has struck again. Already a significant number of customers and programmers are complaining vociferously about quality control.

One not so proud owner of a +2, Paul Sharpe of Shrewsbury in Shropshire, has already had two machines and is about to pick up a third. He says: "The first one was pretty bad. There's a lot of colour variation and parts of the screen which have no *Bright* on are displayed as bright. The problem could be with the modulator."

The same problem was found by John Heap of programming wizards Denton Designs: "I had to return one machine and the screen problem occurred on the machine I've got now, but it's since settled down a bit. The main problem was that the attributes appeared to split in half."

A number of visitors to our stand at the last ZX Microfair had similar complaints but also mentioned that some games would not load. This appeared to be, not a software fault, but rather a problem that could be easily corrected by changing the azimuth alignment of the tape head in the 128K+2s tape unit.

The problems have a very familiar ring to those of us who remember the problems that occurred with the very first batch of Sinclair Spectrums which arrived in the shops four years ago.

No one at Amstrad was available to comment on the symptoms being experienced.

CENSORED

Dracula, the gothic monstrosity from CRL, is the first game to be dragged before the British Board of Censors.

CRL bosses, in what seems like a grand and likely to be successful marketing ploy to sell more games, hoped that the game would receive an 18 X-rated certificate. Unfortunately, either the censors are made of strong stuff or the game wasn't frightening enough and the game only received a 15 – anyone over the age of 15 can buy it.

According to CRL spokesman Ian Ellery, Dracula still makes history. "Nobody's ever gone to the board of censors with a game. This could mark a new trend in computer gaming."

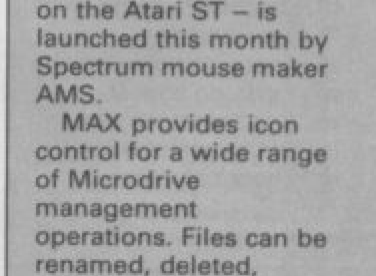
The Spectrum version of Dracula may not be as blood thirsty as its 15 certificate pretends. The Commodore 64 graphics helped to push the censorship board to its verdict but the Sinclair version is unlikely to include such dripping gore. Ellery says: "The digitised graphics take up a lot of Ram so we'll have to see what sort of graphics we can put on the Spectrum. It may be that we'll drop them altogether." In which case the whole exercise will have been all hype and maybe even a complete waste of time.

WIMPS OUT

WIMPS hit the Spectrum! An icon-controlled operating systems – similar to Digital's GEM on the Atari ST – is launched this month by Spectrum mouse maker AMS.

MAX provides icon control for a wide range of Microdrive management operations. Files can be renamed, deleted, dumped, copied, listed, executed from Basic and have their status displayed. Cartridge sectors can be examined or altered and there is a help facility and a note pad. A control panel allows you to alter *Border, Paper* and *Ink* colours.

MAX will be available on Microdrive only, will work with keyboard, joystick or mouse and will cost £14.95. More info from Advanced Memory Systems, Warrington



NEWS

ZX FAIR A HIT!

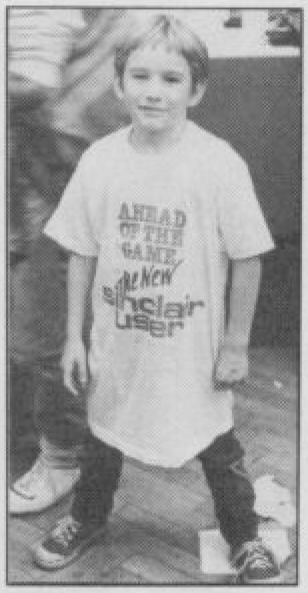
Ever wanted to know how a sardine feels? You should have been to the 20th ZX Microfair. Despite the absence of Amstrad and the Spectrum plus 2 it was a huge success with over 3,500 people trying to squeeze into the Central Hall, Westminster at the same time.

Gilsoft, which acheived instant fame with **The Quill** adventure creator for the Spectrum demonstrated three new programs: **Professional Adventure Writer (PAW)** and **Press** for the Spectrum, and **The Quill Adventure Writer** for the QL. The QL program, is similar to its Spectrum cousin but is specially designed around the QDOS operating system. **The Press,** for the Spectrum, compacts **Quill** text databases so you can squeeze more locations into Ram.

PAW, however, drew the biggest crowds at the show. It's a professional quality extension of the original **Quill** and **Illustrator** programs. The result is an adventure compiler which produces an almost endless variety of screen layouts, graphics with intelligent computer

Howard Gilberts shows off PAW – the pro adventure writing system ▼





▲ Getting in the ZX Fair mood

generated characters and a full text parser.

CCS, the strategy software company, re-emerged after a long period of silence with the Spectrum 128 version of **Napoleon At War.** Melvin Lloyd-jones, managing director of the company is keen to produce more 128 specific games. "War games take up a lot of memory, so the 128's extra memory is very useful. People are beginning to switch from the 48K machine to the 128K machines. Soon we'll be able to produce just 128 games".

Swift Disk demonstrated a IM disc drive for the Spectrum costing £149.99 including interface, power supply and lead. More info from Swift Disk, 26 Church Road, Warsash, Southampton.

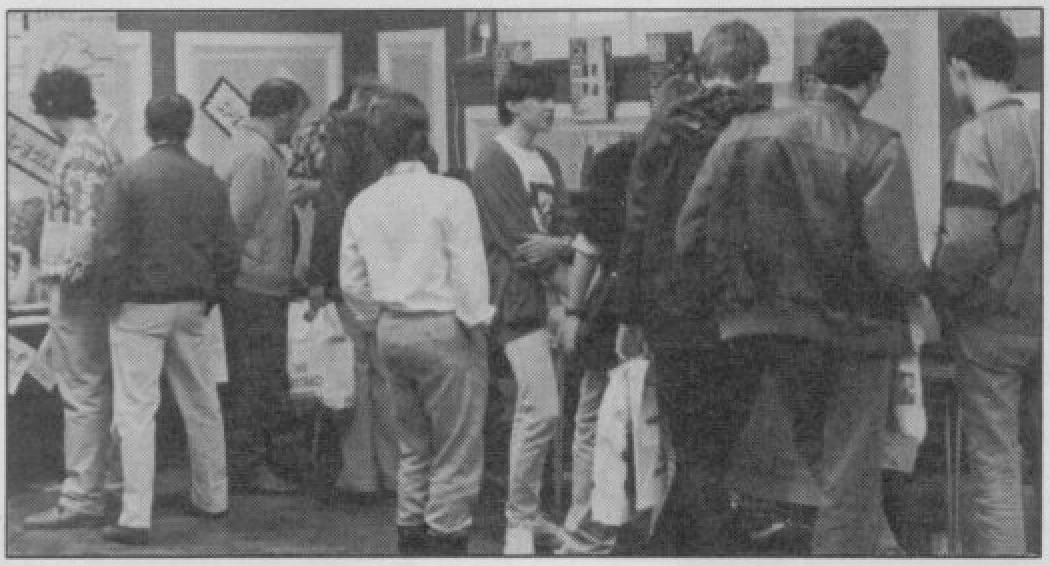
Astracom had a new modem, the AC1000, on show. It costs £166.75 and offers 300/300, 1200/75 and 1200/1200 baud speeds, auto-scan, auto-dial and auto-answer. Details from Astracom, 13 Beeachwood Road, Upland, Swansea.

Rumours of the QL's demise were quickly scotched as visitors swarmed through the door of Central Hall Westminster. Pyramide has a new graphics program – full review next month in SU – which goes beyond the simple screen designers on the market. **Graphics Toolkit** takes the images you've created with other graphics packages and merges them together. You can lay several images on top of each other, stretch parts of an image and move component images around.

Liberation Software showed off its new QL compiler, the **Liberator** – full review next month. Gap Software came up with its desk-top publishing program **Front Page** while Sandy and CST demonstrated their new QL compatible computers.

All the exhibitors we talked to reported a rush of interest which showed that the ZX scene is in its second childhood. The next Microfair will be the 21st and, according to organiser Mike Johnston, anniversary celebrations will be held on December 13.

● We've got 200 tickets to win for the 21st ZX Fair on December 13. Turn to page 30 to find out how



TWTMTW
THAT WAS THE MONTH THAT WAS

Some things never change. The rumour mongers are out again. Since the departures at Telecom Soft – Francis Lee from Beyond, Tony Rainbird from Rainbird and Barry Lewis from somewhere at a higher elevation – there's been lots of speculation in the trade press of Telecom closures.

Whether there is any foundation in these rumours or not it's certainly intreguing that all the big mega-corps like BT, Virgin, Argus and Ariola have completely failed to wipe the floor with the home grown software firms like Ocean, Elite, US Gold and Hewson.

Since the big boys moved in two years ago, they've made remarkably little headway considering their combined muscle.

Argus in particular bought labels left, right and centre – Quicksilva, A 'n' F, CCS, Bug-Byte – and has spectacularly failed to do anything impressive with them.

Now look how successful Amstrad has been on the hardware front in about the same space of time. That, I think, is an interesting comparison.

The good news is that since the launch of the 128K+2 things have been going from strength to strength – it's by far the best buy for any new computer owner.

There's even been an up-surge in demand for Spectrum software. In the run-up to the summer C64 owners, for the first time bought more software than Sinclair owners. But they didn't for long. You and your Spectrum are now back on top – where you belong – and look like staying there.

Talking to software houses it's interesting to see how their perceptions have changed. At the start of this year they were all going flat-out for the CPC, believing Amstrad software was taking over. Now look at them! They've all changed their minds. Ask any one now and they'll say that the Spectrum is the most important micro for them. All this is incredibly good news – it means that for the forseeable future all the best software will continue to come out for the Spectrum first. Look in this issue if you don't agree – there's StarGlider, Colour of Magic, Academy, Fairlight II and The Great Escape.

Interesting to see the new enthusiasm at the last ZX Fair, too. It's a long time since I had to move around a show by repeatedly swapping places with the person next to me.

And somewhere in all this Amstrad surprised even The City with an amazing £75m profit.

Not bad for Big Al who started off manufacturing perspex covers for hi-fi gear■

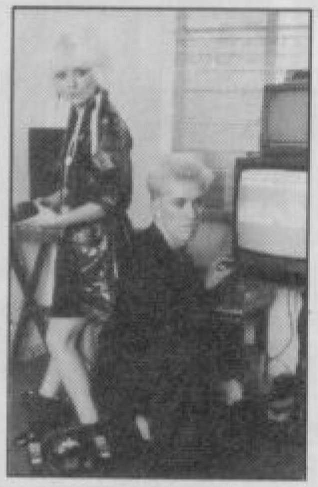
NEWS

BAND'S SOUND-TO-LIGHT SHOW

Turn music into a TV lights show with your Spectrum and a novel 12inch single by new band *Le Lu-Lu's*.

The record contains a computer program on Side 2. Simply record the program on to cassette *Load* it into the computer and *Run* it. Then play the band's music – also on the record – through a stereo system synochronise the on-screen patterns produced by the computer program with the music and, according to record company Possum Records, you've got a pretty convincing sound-to-light show.

The band's three members are Yo-Yo the lead singer. She's largely concerned with the band's image. Her male counterparts are Dr J, responsible for the computer part of the record, and Grey, who's into robotics.





Although they'll take any gig they can get their main money spinner is performing with robotic teas-made's and plant pots in other peoples living rooms.

The record will soon be available through most record shops for around £2.99. Should you want to know more about Possum records, they can be found at 42 Cricklewood Broadway, London, NW2

BEYOND A JOKE

Beyond's **Star Trek** and **Dark Sceptre** two of this year's hottest releases – have been delayed until next year.

Beyond is, however, adamant that the late releases – a significant blow for the company – are not the result of programmers bickering over money, or rumours of problems within the Telecom's Software division's heirachy, following the departure of label manager Francis Lee.

According to new Beyond spokesperson Tom Watson "The problem is we licensed the **Star Trek** title through Simon and Schuster in America, not directly from the TV company Paramount and so everything we has to be approved and that takes 21 days. "The ST version will be finished before Spectrum **Star Trek,** around Christmas – although because of approval we don't know when it'll be released. I wouldn't want to put a date on the release for the Spectrum.

"We could cobble together a version of the game and rush it out but we want to do it properly." Very laudible sentiment, that, especially after the **Supeman** debachle.

As to the rumours in the trade press of problems, Watson commended: "Nobody here knows anything (sic) and it wouldn't make any sense. We've concluded a substantial deal with Ariola for marketing in West Germany and anyone who thinks we've got cash flow problems should have seen the cheque for £¼m that we received as up-front payment from Ariola."

Meanwhile, Mike Singleton, **Star Trek** team leader, has dropped work on his other project, **Dark Sceptre,** to concentrate on Mr Spock's ears.

Consult, the programming team which produced the music for **Fist II** and **Asterix** for Melbourne House, has taken over the program which still requires a great deal of work. David Kelly, (no relation to SU's editor – aarrgh, there's more than one!!), one of the six strong Consult team, says: "Mike approached us in April to do the sound and music on **Dark Sceptre.** Now we're doing the Spectrum version of the game and any conversions."



PROGRAM CRIME BUST

IJK, the top BBC software house, now trying to break into the Spectrum software market, is covered in embarassment.

It's been forced to drop its first Spectrum release because chunks of the game's code had been pirated from Mastertronic's **Spellbound.**

Harry Price, the author of the offending game, called somewhat ironically **Crime Busters,** at first denied the progam was a rip-off but Alison Beasely, of Mastertronic says: "The first 50 bytes of both programs are exactly the same, the solutions to the games are almost the same, the character sets are copies and even our hacker trap is included in IJK's game."

Beasely gave Price two options: "I told him to write an apology to us, stating that the game was copied."

Price refused and, according to Beasely, she said, "In that case you'll receive a writ for fraud and infringement of copyright tomorrow. "After that he agreed to write the letter," concluded Beasely.

Since their discussion IJK has withdrawn **Crime Busters** and asked distributors to return all stocks. Ian Sinclair, a director of the company, says: "We're an old software house, five years old, and we're extremely upset that something like this could have happened when we launch our first Spectrum game. It is the sort of thing that could happen to any software house – the market's got so big that we can't possibly look at all the games."



▲ **Offending game: released and withdrawn**

Mastertronic received the game from SU staffer Jim Douglas, who, being a sharp lad, noticed similarities between **Crime Busters** and **Spellbound.**

128K + 2 DEALS

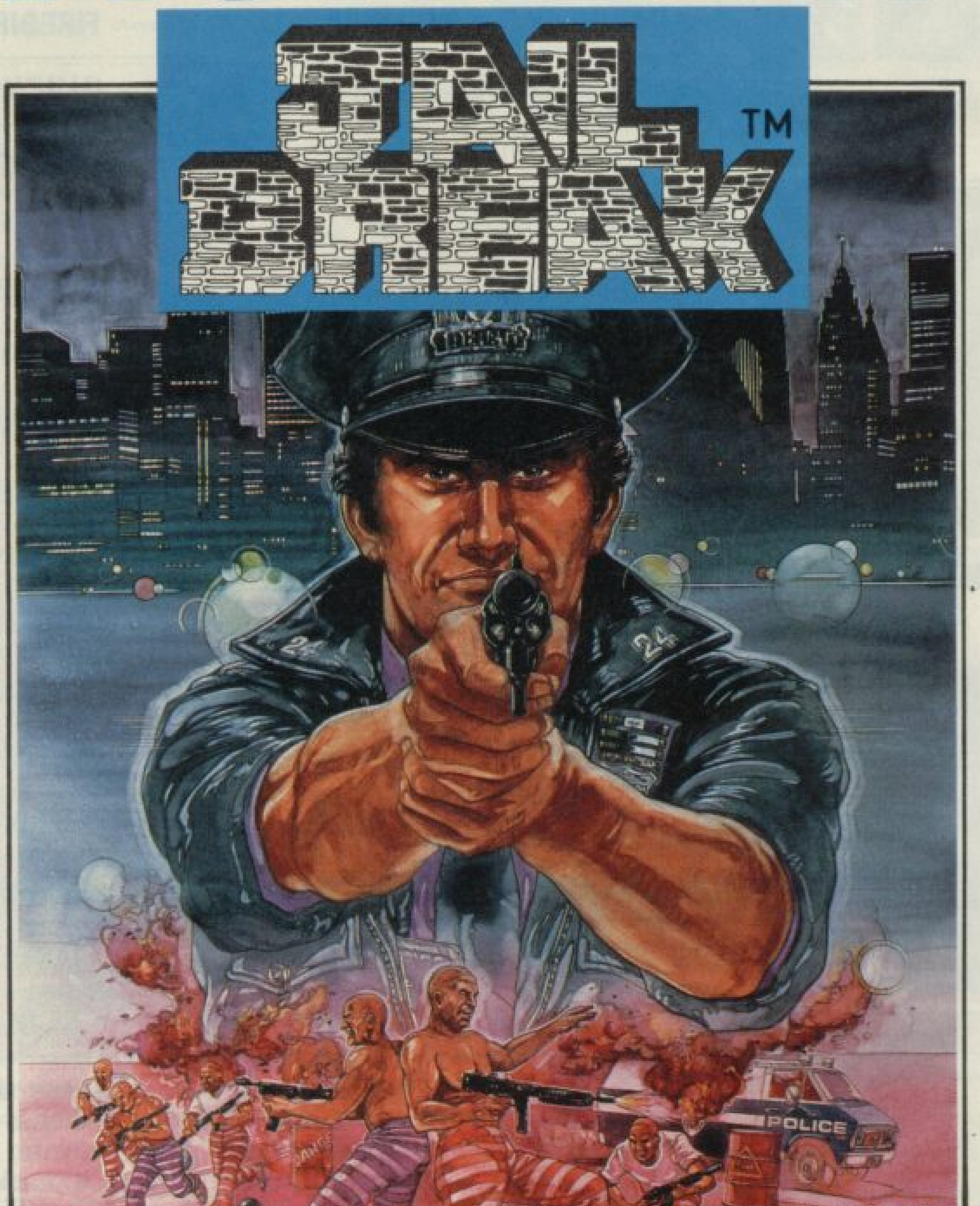
Dixons has finally decided to tow the Amstrad line and bundle the Spectrum 128K+2 with Sinclair titles and a joystick which Boots and WH Smith have both rejected.

For £159.95 customers can expect the dedicated but much criticised Sinclair joystick together with the five original Sinclair software titles offered with the machine (see SU November). Dixons has, however, added two double cassette packages to the bundled software. One cassette includes **Ian Botham's Test Match** with a datafile program while the other includes **Odd Job Eddie** and **Witchfiend.** Again, none of these titles are what you'd describe as enthralling.

WH Smith has – wisely perhaps – decided to sell the 128K+2 without the software at £149.95 while Boots is still offering its own software package of three selected US Gold titles together with the Cheetah 125 joystick.



The Latest Smash Hit from **KONAMI**





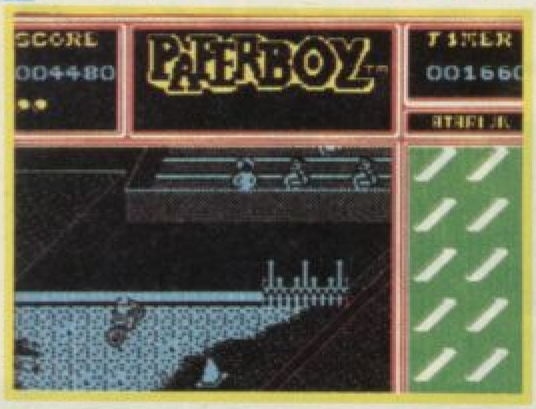
Screen shots from Arcade version

Coming Soon for

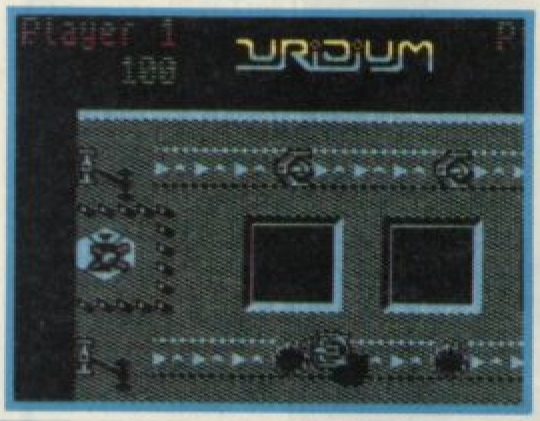
SPECTRUM £7.95
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Tel: 01 228 6730

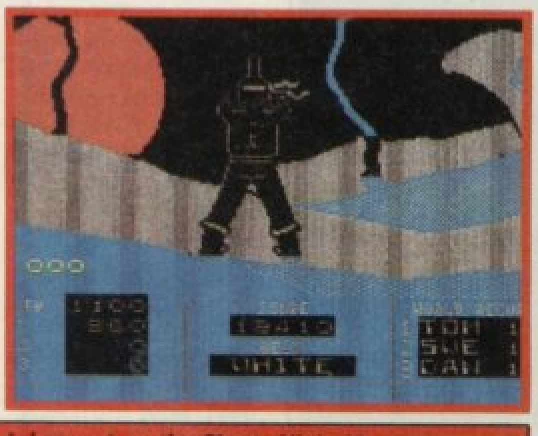
T★O★P T★W



▲ In the top slot: Paper Boy



▲ Tip for the top: Uridium



▲ Longest on the Chart: Ninja Master

1	*NEW!* PAPERBOY		ELITE	£7.95
2	(3) DRAGON'S LAIR		SOFTWARE PROJECTS	19.95
3	*NEW!* LIGHT FORCE	CLASSIC	FASTER THAN LIGHT	£7.95
4	*(12) KAI TEMPLE*		FIREBIRD	£1.99
5	(20) OLLI AND LISSA		FIREBIRD	£1.99
6	*NEW!* GLIDER RIDER	CLASSIC	QUICKSILVA	£8.95
7	*NEW!* TRIVIAL PURSUIT	CLASSIC	DOMARK	£14.95
8	*NEW!* THRUST		FIREBIRD	£1.99
9	(1) ACE		CASCADE	£9.95
10	(18) NIGHTMARE RALLY		OCEAN	£7.95
11	*NEW!* TT RACER		DIGITAL INTEGRATION	£9.95
12	*NEW!* STORM		MASTERTRONIC	£1.99
13	(5) DAN DARE	CLASSIC	VIRGIN	£9.95
14	*NEW!* HEAD COACH		ADDICTIVE GAMES	£8.95
15	(8) NINJA MASTER		FIREBIRD	£1.99
16	(13) UNIVERSAL HERO		MASTERTRONIC	£1.99
17	*NEW!* BOMB SCARE		FIREBIRD	£1.99
18	*NEW!* HAPPIEST DAYS		FIREBIRD	£1.99
19	(2) VIDEO OLYMPICS		MASTERTRONIC	£1.99
20	*NEW!* 3D STARSTRIKE		2.99 CLASSICS	£2.99

HOTTEST CLIMBERS

Hottest new releases this month: The Great Escape is Ocean's best release for ages, programmed by Shadowfire authors Denton it looks very strong; **Druid** is the one that Firebird claims is



▲ Hot: The Great Escape



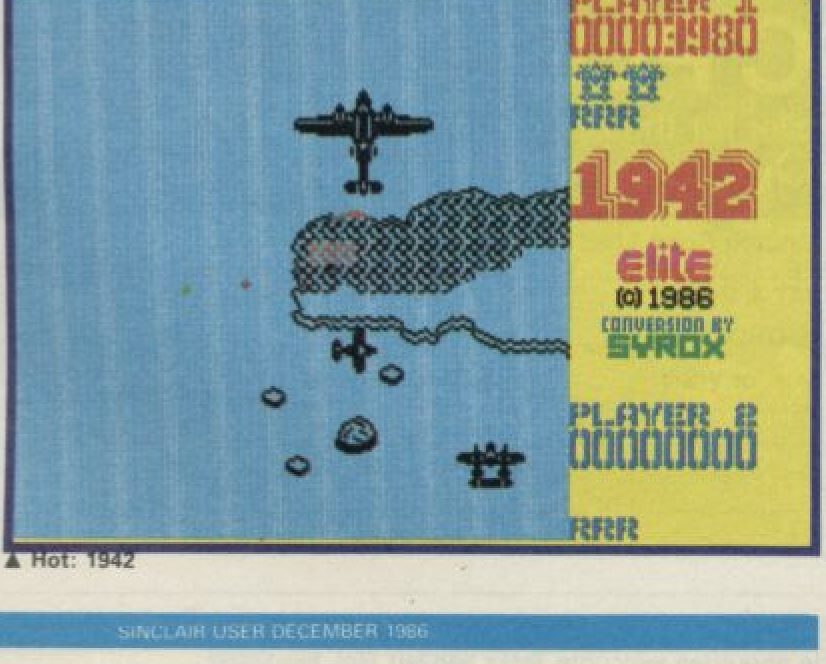
▲ Hot: Druid

★E★N★T★Y

Compiled by Gallup for *Sinclair User*

Excellent conversion. Inevitable hardware restrictions make the game less 'special', but it's still great	★★★★★
A big disappointment, having neither stunning graphics or exciting gameplay... And the multi-loads are a pain	★★★☆☆
The ultimate blaster. This one is mindless destruction at its very best. An essential purchase	★★★★★
A kick in the teeth for all fans of martial arts. Flat graphics and flimsy plot. A let down even at budget level	★★☆☆☆
A graphically good but dull pot-boiler with cute characters. Predictable but well executed	★★★★☆
Highly original and neat game featuring two levels of action. Astounding sound on the 128K version	★★★★★
It's THE yeppie board game conversion. Against all odds it's a terrific effort with sound and graphics questions added	★★★★★
Simple graphics, but don't let that mislead you. This is a game for serious arcaders. Budget brilliance	★★★★★
Fine flight simulator. Not much detail to get in the way of blasting things at speed	★★★★★
Four-wheel fun with the accent on fantasy. Easy to score but tricky on the higher levels	★★★★☆
Excellent simulation, though graphically as astounding as expected. If you're into accuracy, it's got it	★★★★☆
The first Gauntlet-alike released. Overshadowed by Dandy et al but still the only budget one	★★★★☆
Keeps the spirit of the original Eagle strip brilliantly. Immediately playable, terrific	★★★★★
A must for all sports simulation fans. If you thrilled to Football Manager this is for your	★★★★★
Poor quality. Not the Exploding Fist type game it may seem. Avoid it if you can	★☆☆☆☆
Not terribly original perhaps, but a very well done and visually appealing space arcade adventure	★★★★★
Highway Encounter crossed with Knightlore. Excellent graphically and the dull plot is revived by the budget tag	★★★★★
Wally meets Skool Daze runny, jumpy, collecty thing. Cheap but has little originality	★★★☆☆
Smartly produced six-event sports game. Good value – Daley on a budget	★★★★☆
More back catalogue released on budget. This time a genuine classic from 3D masters Real Time	★★★★★

nothing at all like Gauntlet – since Gauntlet still isn't out it'll have to slog it out with Dandy instead; **1942** is another quality coin-up conversion from Elite – not perhaps quite as successful as Paperboy and Ghosts 'n' Goblins, Elite's two previous efforts



▲ Hot: 1942

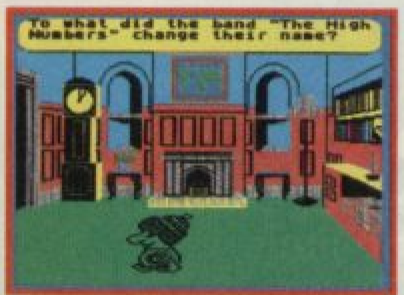
CHART ★ ★ ★ ★ BREAKDOWN

ARCADE

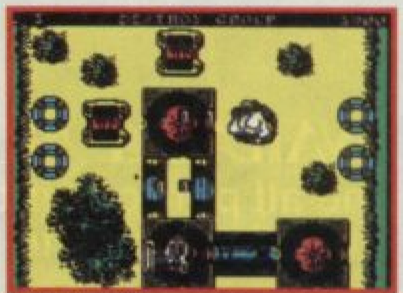
1	PAPERBOY	ELITE
2	DRAGON'S LAIR	SOFTWARE PROJEC
3	LIGHT FORCE	FASTER THAN LIGHT
4	GLIDER RIDER	QUICKSILVA
5	NIGHTMARE RALLY	OCEAN

ADVENTURE

1	VERA CRUZ	INFOGRAMES
2	THE BOGGIT	CRL
3	AFTER SHOCK	INTERCEPTOR
4	JEWELS OF DARKNESS	RAINBIRD
5	HEAVY ON THE MAGIK	GAROYLE



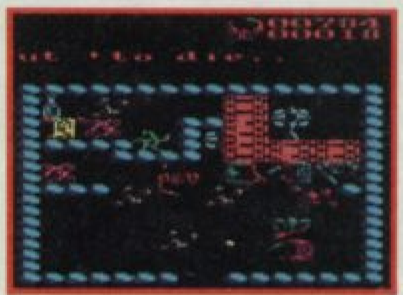
▲ Trivial Pursuit



▲ Light Force



▲ Vera Cruz



▲ Storm

STRATEGY SIMULATION

1	TRIVIAL PURSUIT	DOMARK
2	ACE	CASCADE
3	TT RACER	DIGITAL INTEGRATION
4	HEAD COACH	ADDITIVE GAMES
5	STRIKE FORCE HARRIER	MIRRORSOFT

WORK-OUT TOOL-KIT

1	GRAPHIC ADVENTURE CREATOR	INCENTIVE
2	ART STUDIO	RAINBIRD
3	THE WRITER	SOFTECHNICS
4	ANIMATOR 1	SOFTCAT
5	WHAM! THE MUSIC BOX	MELBOURNE HOUSE

BUDGET

1	KAI TEMPLE	FIREBIRD
2	OLLI AND LISSA	FIREBIRD
3	THRUST	FIREBIRD
4	STORM	MASTERTRONIC
5	NINJA MASTER	FIREBIRD

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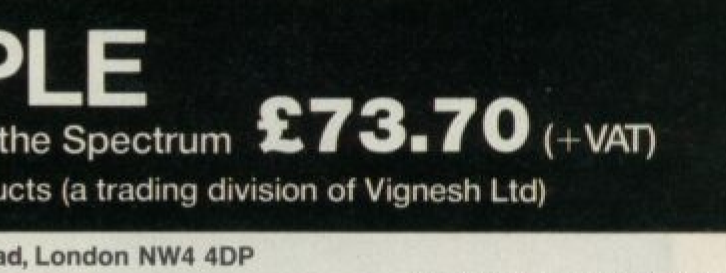
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- ★ Simple Basic Syntax
- ★ Compatible with any standard drive – single or double density, single/double sided, 40/80 track, 3", 3½", 5¼".

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LETTERS

Pass the post

I'm one of the co-organisers of the annual PBM (Play by Mail) Games Convention, which will be held at the Porchester Hall in London on February 7, 1987.

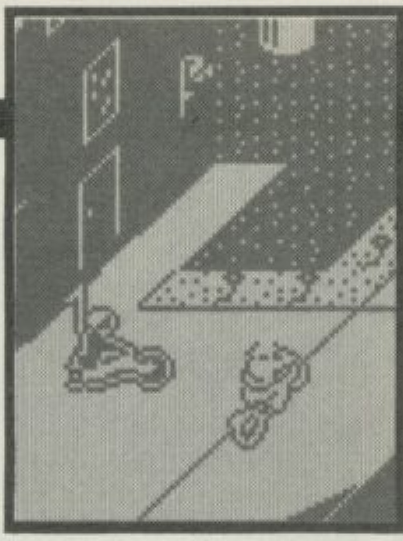
Over the last year PBM has begun to receive fairly wide coverage in the gaming press and the whole thing has really begun to take off.

Postal games are similar in style to many adventure computer games but are always more complex. A home computer can be very useful in PBM for data storage, strategy etc and it is no coincidence that over 90 per cent of PBMers own computers.

For role players, PMB is an extension to their normal gaming. Over 50 per cent of postal games could be termed FRP.

For war gamers there are elements of their hobby in most PBM games. Strategy and tactics are very important in both science fiction and FRP type games.

M J McGarry
London



Quick delivery

After five months of complaining it finally came. Yes it's **Paperboy.**

I ripped it open, loaded it and played. It was brilliant but after two days I got to Sunday with perfect delivery on Monday, Tuesday, Wednesday and Sunday. It said horay and the game went off and said 'input name'.

Paperboy is very good but it's easy to play and easy to finish. It should have been as hard as **Commando** and **Ghosts 'N' Goblins.**

Leigh Prince
Newport
Gwent

Rally round the 128

This isn't a groan 'n' moan letter, even I do have a small correction to your **Nightmare Rally** review (October issue).

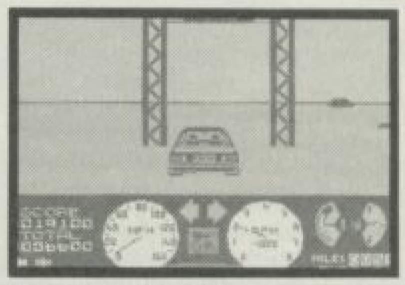
The name of that famous rally driver was spelt wrong it is not 'Hanu Mikola' as Brendon Gore wrote. It is really 'Hannu Mikkola'. It does have two ns and two ks.

Anyway the real point of this letter is compatibility of 48K programs with the 128K.

I live in Finland, and I've had a 128 since April, and I have had no problems with *any* 48K games. (Well, I don't have **Elite**). I do have all kinds of progams with jerky (click/hyper/multi-colour/no colour) loaders and they all work perfectly. The only thing that may cause a loading failure is Interface I and Microdrive. I have them both connected and also Multiface I. I also found the Interface I and Microdrive may cause **DT's 128K Super Test** to jam while throwing the javelin.

But, when I disconnected them, no problems occurred. So I don't understand all those complaints of 128 being non-compatible. It is! Just take it into 48K mode, then type *New*. All programs should load in easily.

Jari Komulainen
Finland



Riglar makes friends

I am writing to you concerning the layout of your magazine.

I congratulate you on your new colourful look. The contents page is brilliant, the preview section's pretty good, *Gremlin's* great, the adventure tips are good, background noise is good, but *Zap Chat* is utterly c--p!

Point A – More emphasis should be put on maps and *Pokes*, and not so much on tips. They should also be clearer, the size of the **Nonterraqueous** map should be the minimum size. And get rid of that div Jon Riglar. It might be a good idea to make two sections out of *Zap Chat*. Have *Zap Chat* for hints and pokes and *Map Chat* for maps and hints to go with them.

As for *Hewson's Helpline* I don't know any people who'd really like to know the workings of a Kempston joystick. I know lots of people however who'd like to do smooth scrolling, non-beepy sound, no flickery character animation etc. Programming tips are what we want.

Mary Aylward
Hanwell
London

● *We agree with some of what you say (not just the good bits) and are doing something about it. . .*

▼ **Jon: turning a blind ear**



Amstrad checksum blunder?

I am writing to you about the 128K+2. It seems to me that Amstrad has made a big mistake by changing the copyright label on the new machine – altering the check-sum to the Rom.

I don't think that is was a necessary addition to the new machine and, while it might not have any implications at the moment, what about in the future? When the machine finally does get the software support it deserves and programs get more complicated it could lead to serious problems. Does this mean that me and the other 70,000 people (mugs?) who bought a 128 will be left out in the cold?

There's no chance of an up-grade from Amstrad is there?

Scott Liddle
Billingham
Cleveland

As an existing 'rubber' Spectrum owner, I would not necessarily agree that the 128K+2 is an ideal upgrade, good though it looks.

I already have two tape decks and a high quality joystick/interface, so these features built-in are no great advantage, particularly given the non-standard part and the fact that there is no external tape facility – so if the built-in deck fails to load a program, tough luck!

Also the lack of a tape counter is a glaring omission – OK if you just want to load single games tapes, but a pain in the neck if, like me, you have a lot of short routines and utilities on one tape, or want to find a game on a compilation tape.

Roger King
Bucks

I have been considering buying a Spectrum 128 when they beecome discounted. However I am now npt to sure if this is a good idea. Surely, if the check value to the Rom has been changed in the 128K+2, this means some programs designed for the original 128K will not run.

John Cribbin
Camberwell
London

● *Worry not. The point GT was making is that hardly any software does use a checksum to the Rom – most, if not all, of your existing software should be fine*

ZX81 returns

Can I through your magazine inform all your readers about a club that's called the Computer Games Club and we cater for 1K and 16K ZX81 users. You get a free cassette which contains two great games when you join, four club magazines which will have games listing every time it comes out, newsletters plus the chance to communicate with other ZX81 owners around the world.

We will also inform members where they can still buy the games for their poor neglected machines.

If you would like more details about the club write to me at the address below.

Steven Howlett
24 Beacons View Road
Clase
Morriston
Swansea SA6 7HJ

LETTERS



Having waited for well over a year for the sequel to **Doomdark's Revenge – Eye of the moon,** I'm starting to get impatient. I'm here twiddling my thumbs while that Mike Singleton is inventing **Star Trek** ad **Dark Sceptre.** Is there any hope for us deprived adventurers to obtain this before Christmas?

From an insignificant blob (called Eric)
Portsmouth
Hants.

● *No chance of **Eye of the Moon** before Christmas. In fact some of us are wondering if we'll see **Dark Sceptre** by then. Don't hold your breath.*

Heave a Psi

Seeing your review for **PSI Chess** I thought, great, this will pass the time, I ordered it and on August 31, I sent a post card reminder. September 12 and still nothing – not much classic about the service.

Then I sent to CDS for **Colossus 4** which came almost by return and is most enjoyable. So have written to The Edge cancelling.

Geoffrey Philips
Cumbria

I feel I must echo the views of Paul Robertson in the November issue of *SU* regarding **PSI Chess.**

Granted the graphics are excellent but that's where it ends. Trying to manupulate the controls with all those multiple key presses is ridiculous and the whole program is decidedly user unfriendly. The standard of play is absolutely abominable and the response time is pathetic. Incidentally it normally crashes in correspondence mode!

However the computer press seems to have gone overboard for the game...

Sinclair User: Classic
C & VG: Hit!
ZX Computing: Monster Hit
Your Sinclair: 8 out of 10

The moral of the story is clear: if you want a chess program reviewed properly – get a chess expert to review it.

Having said that, I must sing the praises of **Cyprus Chess II** which plays an excellent game.

Martin Page
Hornchurch

Shot down

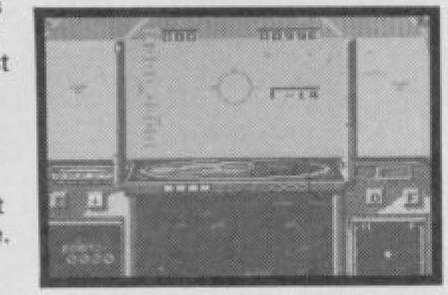
I feel I really must take Graham Taylor to task over his review of Mirrorsoft's **Strike Force Harrier** (October issue). Sophisticated? Accurate? I would have been more inclined to describe it as 'trying to be too clever for its own good'. After playing the game for only 10 minutes I found three glaring errors.

● It is quite possible to perform endless aerobatic rolls whilst in the hover – a manoeuvre which should spell certain death. I am sure British Aerospace would be delighted if the real thing could do the same thing!

● The program manual states that Flaps Green – down, Flaps Red – up. Why is it then yoi can go faster with flags down than with them up – perhaps the programmer has got the colour back to front?

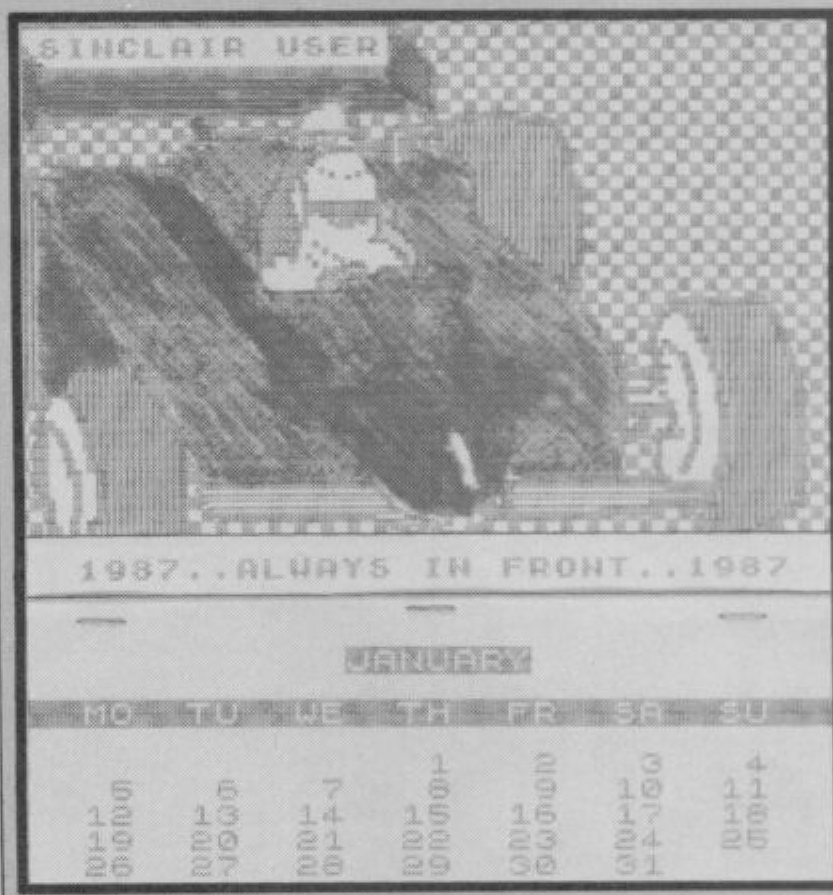
● Although the aircraft rolls reasonably accurately you can get the calendar out while it climbs and dives – if the real thing were as 'mushy' you'd again be dead in seconds!

For my money there is still nothing to touch Digital Intergration's **Fighter Pilot** for accuracy – and I speak with experience of piloting real aircraft as part of my job.



Strike Force Harrier is just another 'shoot 'em' up emulator a lá **ACE.**

Tony Lake
Northumberland



Looking into the future

Program Printout *Eight Days a week.* Further to my letter of July 22, I was pleased to see the addendum to the above program in the October issue of *SU* .....and, eureka!!

Enclosed is a hastily produced 1987 calendar, utilising the above program and Softechnics **The Artist.**

Cecil Ockenden
Dunstable

Baud walkers happy

I would like to congratulate you on your realization of all the people who, like me use a Spectrum for communications. I am of course referring to your BB (Bulletin Board) list in the October issue. Only one problem. Not only do we need to know the phone number, name, content, place and board rate, we also need to know how the data is sent: scrolling or viewdata and whether it's fullor half-duplex. Please could you specify this in your next list? I also noticed the absence of Micron boards (1200/1200 half-duplex) as these are run on the Spectrum alone and there are very many good ones. I do think you should have some of these in your list.

Christian Coultard
Ormskirk
Lancs

I read with interest the October issue of *SU.* Especially the Bulletin Board Top 10.

Can I add to your correspondence on the Micron BB's? The software needed to access Micron BB's can be down-loaded from Prestel on page *600613517 free of charge. Or if you have a user-to-user programe like Dialsoft then you can give me a phone call and I can down-load it to you. Here is a list of some of the Micron boards that run all over Britain. Mine is called Prestonet.

0772 612462 Prestonet Tuesdays, Fridays and Saturdays: 8pm – 7am; Sundays and Mondays: 10pm – 7am
051 5464640 Livernet Everyday: 10pm – 1am
064 2596241 The Other Board Monday/Wednesday/Friday/Sunday: 9pm – 11pm
0506 881184 Sibby's Den Monday/Friday/Saturday: 8pm – 10pm
0274 586923 Extel Everyday except Tuesdays: 8pm – 11pm

These are just a few – there are a lot more. Give one a ring inside opening times. The access time for each page is a bit slow but just as good as Prestel.

J Langfield
Preston
Lancs

Serious doubts

As a regular reader of *SU* (since March 1984) I would like to make some comments about your once-excellent magazine. I though that *SUs* main aim was to encourage and teach people to program.

You don't seem to be doing that anymore, only encouraging and teaching people to play games. The programs in the *Printout* section are either too long, or useless... Why can't you give away any better games than those in the subscriptions section?

They certainly didn't make me want to fill the form in.

Having said all this, I like the contents page. *Helpline,* top 20 and *Background Noise.*

I will buy next month's *SU* for the robot, but if there is no improvement your magazine will certainly lose a loyal customer.

D Fancourt
Beds

● *Sorry you're unhappy. Actually we haven't really reduced the amount of (so called) 'serious' material in the magazine at all – but we are trying to present it in a more lively way. True there is more material on games but it is a mistake to see this as some sort of inferior activity to 'real' programming. Both are valid and we support both*

NEXT MONTH

WE SORT THE CRACKERS FROM THE TURKEYS!

Dear Reader,

Just a note to let you know that Sinclair User is having a party and you are all invited. In celebration of Christmas the New Year and anything else we can think of we will be telling jokes, having fun and watching the tables groan under the weight of reviews (Yum Yum)

Tuck in to a feast of tasty treats designed to fill you up over the Christmas hols, New Year and beyond. Members of the staff doing their party pieces, (you are reminded of the rules on giggling) and there will be sketches and quips of a seasonal nature.

In a feastive mood we'll be looking at cartoons on your micro. Graphics and animation techniques are now often of cartoon quality so comic-book or TV cartoon characters are a natural for conversion. We investigate first.

Next month we inaugerate the Annual Sinclair User awards. Your chance to vote in dozens of different category's (Best program, best programmer's haircut that sort of thing) in what will surely be the definitive, most highly regarded, tokens of esteen awarded in an industry which seeks to nurture excellence and blah blah blah....Should be fun.

There's the first page of your reviews – our blow for audience participation (a cheap, quick page to do as well) and more robot buggy information.

Sinclair User party. Begins Dec 18.
Set to last forever.

Background Noise looks behind the top games of the moment and speaks to the programmers who sweated blood to produce them. Background Noise looks from the author's point of view — at the particular programming problems and the way they were solved

Trivial Pursuit

Oxford Digital Enterprises

"Why can't an elephant jump? Don't ask me, or anyone else at ODE. We know all the answers. Well, almost.

How do you play a game like Trivial Pursuit on computer? Domark presented some broad outlines as they saw them. I was hooked.

Converting a hit board game to computer is daunting. Presentation must positively add to the game. After all, who will play the computer version unless it has some intriguing new features? That's why some of the major UK software houses had rejected the idea. The second angst is that if you screw it up, then the computer literati, SU included, will tear you to shreds.

With these reservations we spent a couple of weeks working and re-working a design format until we were happy.

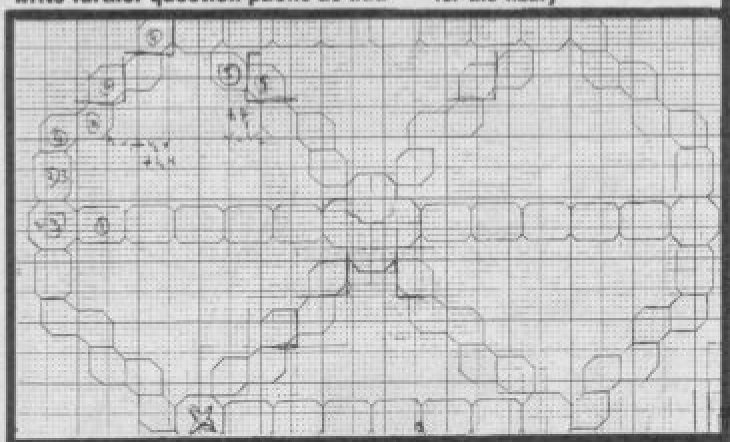
Domark rightly suggested an animated host asking questions on a separate screen. Then Domark presented our combined proposals to the game's agents, who approved.

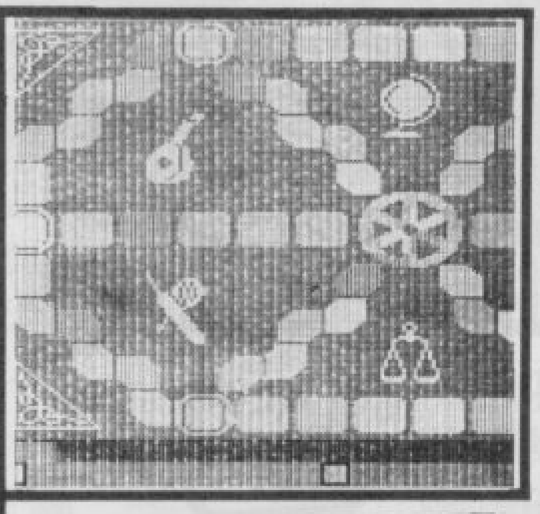
We were on our way. And we had just under five months to complete four versions of the game on the Spectrum, C64, Amstrad and BBC. It had taken the originators several years to produce the board game – but at least we had their foundations.

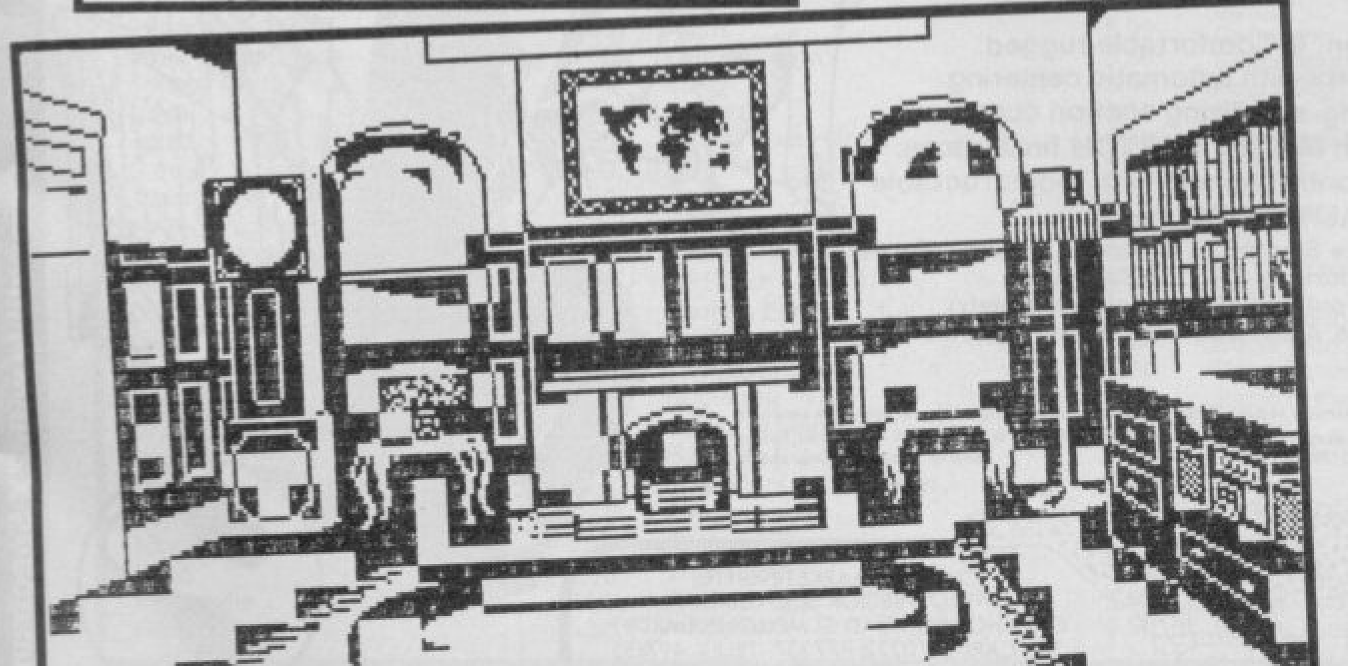
Our main innovation is uniIODE. We knew we were going to have to write further question packs as add-ons to the main game and we wanted to kill three birds with one stone by getting the Spectrum, C64 and Amstrad to read the same tapes. Gareth Blower – ODE's chief programmer – met the challenge, and the work's now bearing fruit, with the Young Players' edition all on one tape for three machines. Moreover, using uniIODE, John, Steve, Little Richard and Big Richard (working on the Spectrum, C64, Amstrad and BBC, respectively) could transfer data, matching each version as closely as possible. Debugging could have been nasty, but with four simultaneous versions most problems were ironed out early.

The screen design was a major headache – colours and categories all fighting for space. It took artist Geoff Quilley of Pawn fame two weeks of hard work to produce a really presentable board (in that time he'd have finished five Pawn screens on the ST!). Attribute problems on the Spectrum, were tough to handle and required attention to every minor detail. The game's action flips between the board screen and a question screen, fitted out like an Oxford Don's study. Geoff based it all on some 'Golden Section' principle, which none of us had heard of and John loaded the two screens, touching them up for the Spectrum's nasty double-width pixels.

Below: Mock-up for the board. Bottom: First designs for the libary







The Spectrum has the least memory of the three uniIODE machines, so the code had to be very tight. As the main screens are memory intensive, we had to devise a way of compacting the screen data. To save space we used techniques very similar to those found in adventure games – in the end a 6K Spectrum screen was stored in around 2K of data.

We decided to split the 3006 questions into eight separate blocks. The data is loaded in compacted form, using an even tighter form of compression than for the screen. We achieved just over 50 per cent compression of text. The baud rate of data is just under 2K. Numerous checksums are incorperated on tape to ensure that if anything goes wrong loading is aborted. This is vital because when the data is decompressed in the machine one bit out of place and you'd have double-dutch on the screen.

Loading is now very reliable. At the end of the day we felt rich with eight bytes to spare!

Back at the ranch we were beavering at questions. We analysed why Horn Abbot's questions are so much fun. They're variously intriguing (What members of the Royal Family can't vote?), unexpected (How many golf balls are on the moon?) and amusing (What are the natives of Tangiers called?). Humour and word-play are often present. Trivial Pursuit provided 6000 questions, but we wanted an extension of the original and not merely a computer clone. That meant many days in libraries for the question-team, seeking good trivia.

Dinners were punctuated with fresh questions produced between courses. Friends with sacks of useless knowledge were sougth out. ODE's editor was setting rigorous guidelines for the questions. Nothing sexist, racist or unpleasant.

Older generation questions were to be minimised; sports questions should give people a sporting chance; male-oriented questions should be balanced by female-oriented ones. We selected 1400 of the board game's best questions, added about 1100 of our own and provided 500 sound and graphics questions. With sound, for copyright reasons we had to stick with traditional music and tunes for which Domark had bought the rights. Meticulous proofing was needed to ensure accuracy of fact, spelling and grammar. It's meant many twenty-hour days for months on end – and still the odd mistake slips through, as indeed it does in the original board game.

Our approach has been even more rigorous for Young Players, which has more multiple choice, more humour and more clues. Secretly we prefer it!

Flashback: August 15 and the time is *T* minus 12 hours and counting. Final program masters are due. The frequency meter on the Spectrum hi-fi isn't working. Our *TP* insists on exiting his study backwards. The grandfather clock runs at half-pace when *TP* is on-screen. We're all dead tired. but the gremlins are found, the masters mastered, and we wait for the reviews.

So, that's it. PCW, Atari, IBM, Australian, French, German, Spanish, American, Canadian and young Players editions are keeping us occupied... as well as another project under wraps. "

By the way, if you're curious, it's because an elephant has no ankles■

Dave Pringle

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All that software, simply bursting forth from the stands. Anyone who missed out on the October Microfair is pretty ruddy, unlucky, we reckon.

But, there is a snag. Millions of prospective Microfair visitors were thrown into an amazing quandry of indecision. And what IS this astronomical problem which they face? Well, should they spend that £1.50 or £2 admission fee on the ticket, allowing them to see the show for themselves, or buy one-and-a-half or two copies of SU the most wonderful magazine in the cosmos?

It's a question that has baffled many through the centuries, but **WE HAVE THE ANSWER.**

Oh yes! We're going to let 200 of you get into the next Microfair, on Saturday, December 13, **ABSOLUTELY FREE!!!**

What you win:

The first 200 correct entries will get free tickets to the show. Also, a lucky member of this 200 will receive a giant Bottle of Bubbly — this is after all the twenty-first ZX Microfiar — don't time fly.



What you have to do:

Fill in the form, with your name, address, and the names of three of the locations at which the Microfair has been held in the past. There are four, so we're being especially kind. They are all in the London area, too.

And then cut the coupon and send it to: ZX Fair Ticket Bonanza, Sinclair User, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. Send it pronto — closing date is Dec 5.

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Location 1: ....

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ARCADE REVIEW



INFILTRATOR

I have this unreasoning resitance to games that were No 1 mega sellers in America. Especially ones where you play a secret agent out to destroy some mad leader's plans to destroy the world.

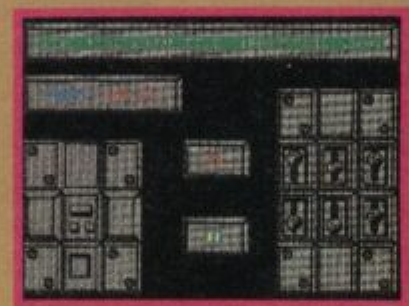
Mad leaders mean only one thing to Americans – the dear old Colonal Daffy himself.

Infiltrator is a sort of simultaneously laid-back and flag-waving flight simulator plus grapic adventure with bits of other things thrown in. And it has that infuriating habit so common to American products of having to be loaded in different sections – because it was originally developed as a disc based Commodore 64 title. On tape it's certainly a bit irritating.

Moans apart, though, **Infiltrator** is pretty good.

Not quite the mega opus the publicity blurb would have you believe, but still a pretty imaginative game for all that.

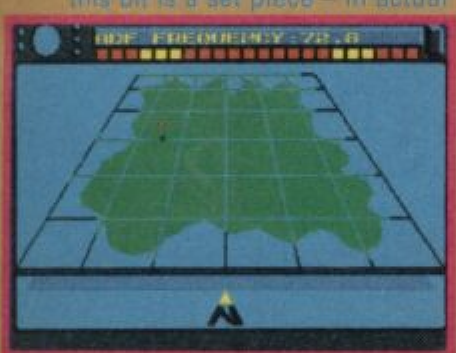
The first part is a helicopter simulation. Quite a good one but not quite as good a one as you first think it's going to be. The take-off section is very impressive the view of your land base slides down behind the cockpit window most convincingly. The problem is this bit is a set piece – in actual fact you get a sort of all-purpose craggy thing to represent land that doesn't really change at all – if you go faster lines move across it.



▲ A friendly message from the enemy ● Into the attack again

Cockpit detail is great. Clearly visible gauges and read outs, lights that wink, status report lights and best of all two hands that push, pull and press on controls in response to your keyboard or joystick commands. Neat.

Controlling the helicopter is relatively simple, essentially reduced to joystick commands plus specific keys used in take-off and for the weapon system. There are also two defensive systems, flares and chaff – one stops heat seeking missiles the other radar guided attacks.



▲ The map screen ● It shows your location and gives direction frequency

The 'mission' part of all this has you piloting the helicopter to a secret location where you begin Part 2 of the game, the graphics adventure. Getting there requires you first getting the heading from the computer and typing it into your Automatic Direction Finder whereupon you go in the right direction merely by keeping the finder pointing north.

The problem in Part 1 is to evade destruction by the enemy, by your own forces or by loonys.

You have heat-seeking missiles and cannon with which to fight back but watch out for attack from behind. Use the display information to find out what sort of missile is coming your way. Engage the 'Whisper' system when you wish to land (so the baddies don't hear you of course) and you are on Part 2.

This has you running around a 3D map of the mad leader's headquarters and entering and searching rooms for useful objects. It's an icon-controlled affair, involving the use and selection of identity papers, gas cannisters to knock out guards, a camera to photograph documents and explosives. There are doors to be unlocked, mines not to be stepped on – the usual stuff but quite nicely presented with some good animation here and there.

When you have completed your mission it's back to the helicopter for another flight.

I can see why **Infiltrator** was so popular. It manages to make two pretty good games slot together into some sort of whole – like playing out a whole movie.

Personally, I felt that there was plenty here that was good but nothing that was brilliant. You may love it ■

FACTS BOX	
Like being in an action film. Not a brilliant film, maybe, but certainly a good one. Simulation meets adventure	
★★★★★	INFILTRATOR Label: US Gold Author: Chris Gray Price: £ 9.95 Memory: 48K/128K Joysticks: various Reviwer: Graham Taylor



▲ The control cabin ● In flight with another plane on the horizon ● Friend or foe?

SOFTWARE STAR RATINGS

All software reviews carry a star rating, the basis of which is value for money programming, graphics, speed, speech and sound presentation and addictiveness

★★★★★ **Solid gold. Buy it**

★★★★☆ **Well worth the folding stuff**

★★★☆☆ **Pretty average Buy if desperate**

★★☆☆☆ **Very poor. Probably over-priced too**

★☆☆☆☆ **A total rip-off. Complain loudly**

ARCADE REVIEW | TOOL-KIT REVIEW | WORK-OUT REVIEW | STRATEGY SIMULATION REVIEW | ADVENTURE REVIEW

Each review carries an icon which shows the type of software.

Arcade is for animated games, which in general, reduce the life span of your joysticks.

Toolkit covers programming utilities which improve the quality of home-made software or packages which make machine code easier to write.

Work Out, software which can be used in the home, such as car maintenance or home finance.

Strategy and Simulation are games where thought, planning and judgement are the principle skills required.

Adventure includes either graphic or text adventures.

TARZAN



The licence to **Tarzan** always seemed an obvious one for some software house to grab.

Rope swinging techniques have been perfected since the days of **Hunchback** and so it would have been an easy option to do a **Pitfall**-in-a-loincloth where a large flickery (although predominantly green) sprite would be required to swing on ropes, jump holes, dodge arrows and bounce over crocodiles, the idea being to rescue Jane (poor girl kidnapped by natives and facing one of those mysterious fates that are worse than death.

Martech's **Tarzan** features: spears to dodge, ropes to be swung on, holes to jump and a Jane who needs to be rescued. But it isn't what I expected at all.

Far from being a dressed-up **Pitfall, Tarzan** is stunning looking game with some of the most beautifully designed backgrounds I've ever seen.

The most immediately striking feature is the way each location is framed in the foreground by a black outline of trees and twisted vines. You seem to be looking 'through' the undergrowth peering through a gap in the dense trees to a clearing where the action takes place.

Tarzan himself is a largish sprite and aside from running and jumping, can be persuaded to punch people – **Exploding Fist**-style – with high or low blows and somersault in mid-air.

There is no unnecessary complexity in the 'dealing with your adversaries' part of this game. **Tarzan** just punches them and/or runs away. The animation both of punching and of running away is full of character and is smoothly realised. Tarzan's mighty leaps (though looking a little like he's jumping over a skipping rope) are similarly effective.

It isn't all greenery: no matter how impressive, all that foilage would get pretty tiresome after a while and **Tarzan** has for reasons to be explained in a minute, to search a series of caves – all craggy detail and rocky fissures – which contain some rather cute looking spiders last seen in the immortal **Horace and the Spiders** arcade game. They are less friendly than they look however and Tarzan has to deal with them.

There is also this forbidden temple that occupies the later section of the game and in which Jane is held captive. This is another impressive location and looks just like forbidden temples look in the original Tarzan movies. Lots of rough-hewn rocks, native artifacts and flaming torches. The detail, as ever is excellent.

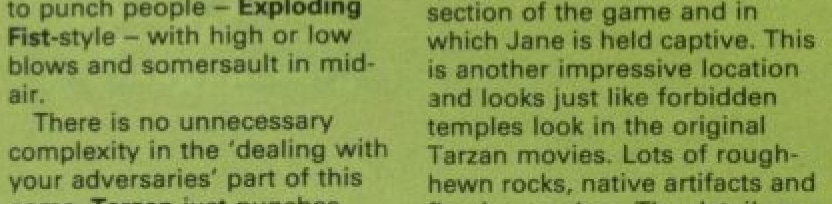
It is only after an hour or so of wandering around the jungle quite happily that you start to wonder about the plot.

Sure, there have been spears to dodge (although actually being hit by a spear is not deadly. Tarzan is not allowed to die under the conditions of the contract and simply looses energy – loose enough and he sort of goes to sleep and wakes up again at the beginning) and he gets a few ropes to swing on as well as some natives to thump. But gradually this 'what am I supposed to be doing?' feeling grows.

To release Jane Tarzan must collect seven gems scattered around the jungle. These are exchanged for Jane's freedom.

Collecting seven gems – however hard I looked at it – is basically not a terribly original concept.

Actually, getting the gems involves some thought, it must be said. And this is where the 'useful objects' part of the game comes in. Any game which isn't a reaction test usually depends on 'useful objects' for its gameplay. Scattered around the jungle are, among other things, ropes, torches and the odd monkey. I think its not being overly blabbermouthed to reveal that torches light up dark places and ropes are for swinging on. What seems apparent is that this 'using objects' part of the game was introduced at a late stage – the objects are designated by a box that Tarzan stumbles across in the jungle. When you go to the *Select Object* screen the entire current location blacks out disturbingly for a couple of seconds whilst the location is redrawn. It hardly matches the elegance of the graphics. There is no 'animated' use of the objects either, just having and selecting the *Use Torch* will suddenly result in a previously



Top: Alone in the jungle ● Tarzan nuts thin air
Above: Inside the caves where spiders lurk and exits are hard to find
Right: A gap in the trees ● A panther zooms past

FACTS BOX

Beautiful to look at and slickly animated – but with hardly any plot. All dressed up and nowhere to go

☆ ★ ★ ★ ★

TARZAN
Label: Martech
Author: Jason Austin
Price: £8.95
Memory: 48K/128K
Joystick: various
Reviewer: Graham Taylor

HINTS AND TIPS

- **Make a map (believe me)**
- **Monkeys are good at climbing**
- **A good attacking move – somersault over opponents, turn around quickly and punch them**
- **High punch has more effect but the lower punch is easier**
- **There is a way of avoiding spears, spiders and flames**





dark location becoming lit. Again, whilst it works, it's an inept element in an otherwise classy-looking game.

Better is the monkey which romps around entertainingly and has a specific function in the game in the spirit of the original. No clues though.

Having spent many hours wandering around the Tarzan jungle beating up a few natives, and swinging on a few ropes I was struck by a number of things.

Tarzan is stunning to look at and superbly animated.

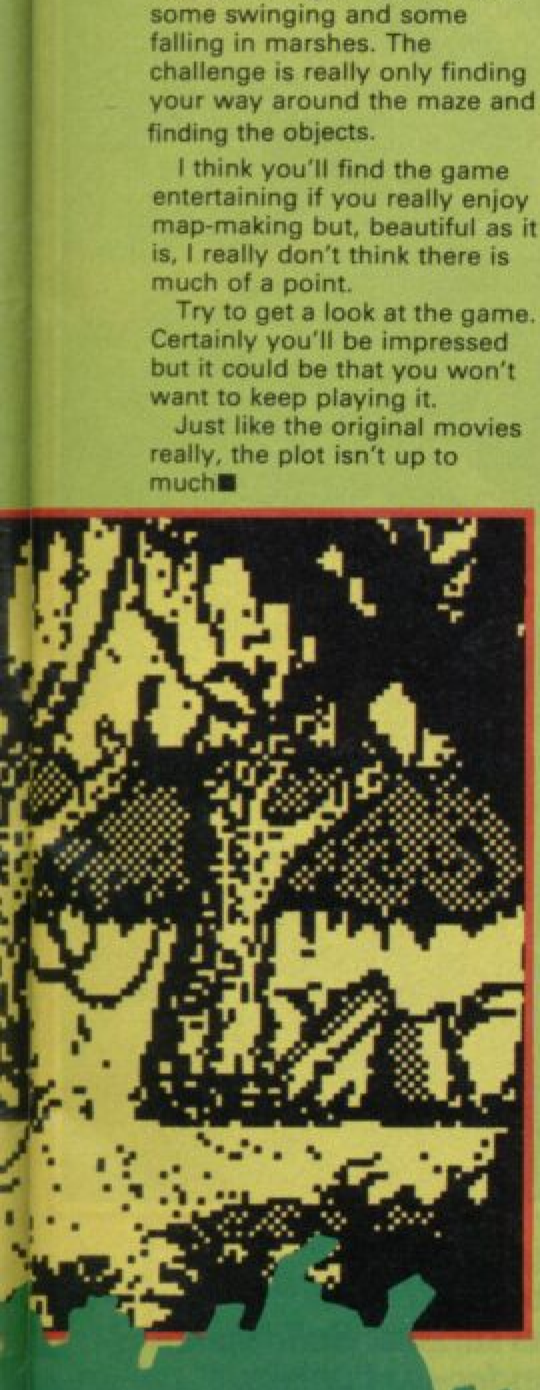
The gameplay is utterly simple however, more the kind of thing you'd expect in a bog-standard budget game.

There may be 250 screens but your actions are restricted to a little punching here and there, some swinging and some falling in marshes. The challenge is really only finding your way around the maze and finding the objects.

I think you'll find the game entertaining if you really enjoy map-making but, beautiful as it is, I really don't think there is much of a point.

Try to get a look at the game. Certainly you'll be impressed but it could be that you won't want to keep playing it.

Just like the original movies really, the plot isn't up to much■





ARCADE REVIEW

CAMELOT WARRIORS

Grab thy sword get into 'eth' mode – jumpeth, kicketh, fighteth etc – and you can leapeth into the land of **Camelot Warriors**.

You're whisked away from the 20th Century and dumped back in the mythical past where Arfur reigned over his clapped-out kingdom. A trek to the castle, armed with your trusty blade Excamembert (sic), is the only way in which you'll find the solution to your timeslip trauma and get back to the future.

First, however, you must plough through three worlds of eye-clawing owls, flesh-eating spiders, killer fish and deadly plants to find four elements of the 20th Century which dropped through time with you. They are upsetting the balance of nature and, to keep Camelot tidy, you must find them and return them to their correct place.

The game's four worlds include Forest, Lake, Caves and Castle. Each land is inter-linked with others. For instance, you can jump from a grassy glade in the forest into the almost total darkness of the caves: no attribute clash there. The forest harbours an evil druid who'll turn you into a toad, and a race of giant owls who's wings batter you to death at the moment you enter the game.

Be ready with your sword and you can slice them in two.

So far so good, unfortunately, the game makes use of a weird joystick and keyboard control system. You'd think that to swing the sword you would press the fire button and to jump you'd move the joystick handle up. Wrong. The moves are vice versa and, when you're up against the wings of death or some such your instinct to hit that fire button will prove fatal.

Did I mention jumping? You'll have to do a lot of that. The caves contain purple piggies which bare no resemblance to the menacing boars they're supposed to and two-legged go-stoppers that creep up behind you and hack away at your calves. As they approach you jump or you'll lose yet another of your five lives.

Once you've despatched the monsters you can get on with finding the four elements which are hardly recognisable from the descriptive runes printed on the cassette inlay. I can report, however, that one of them is a light bulb and another a radio perhaps.

Each element has its guardian, taken from the world of mythology. When you've found an element hand it over to him – he knows what to do with it.

The Forest is ruled by Aznaht, a master druid who has command of all animals and who can turn humans into beasts. Azornic is a powerful dragon lord who's fiery breath feeds the cavern's central heating system. The lake's ruler, on the other hand, relies on Greek mythology for his existence. He's Kindo, brother of Neptune, and his domain extends over all things watery.

King Arthur is the last of the mythical guardians and he will show you the way to the present, which is a pity really. I found King Arthur's court addictive.

Camelot Warriors isn't a complex game but its mixed bag of mythology and science, mawkish monsters and neatly animated graphics appealed to the puzzler in me.

Ariolasoft has tried to mix arcade animation with strategy. If it's not completely successful it's because of its lack of complexity.

Camelot Warriors is for the arcader who's not afraid of gentle riddles. But it probably isn't one for die-hard strategists■

FACTS BOX

A myth-orientated game featuring Britain for a change. Gentle riddles and faery graphics. Not a heavyweight, though

CAMELOT WARRIORS
Label: Ariolasoft
Author: Dinamic
Price: £8.95
Memory: 48/128K

Reviewer: John Gilbert

★★★★☆



AMSTRAD £8·95
ZX SPECTRUM £7·95
COMMODORE 64 £8·95



Officially licensed coin-op game from Nichibutsu.
Follow up to Moon Cresta. Now for your home computer.
Pilot your space fighter over the planet eliminating all alien life forms on its surface. Build up fire power on board as you dodge missiles launched from land silos and under-sea bunkers.
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21st ZX MICROFAIR

CHRISTMAS SPECIAL



This year's Christmas Microfair is also our 21st show and we hope Spectrum and QL owners will help us mark the occasion. To thank you for your support (and welcome new visitors) we'll be running (easy) competitions with champagne and Christmas hamper prizes!

Around one hundred suppliers will be there with a huge selection of hardware, software, books, magazines and other goodies for the full range of Spectrum and QL computers.

You can see the new software releases, inspect the latest add-ons or just browse and chat with the experts from the user groups or your favourite magazine. There will be **big** discounts on selected items and special bargains at the Bring and Buy stand.

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Send **now** for reduced price tickets on the coupon below

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New Horticultural Hall, Elverton St, London SW1
Saturday 13th December 1986 (10am-6pm)
Admission: Adults £2.00 Kids (under 14) £1.50

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21st ZX MICROFAIR

Please include a stamped, self-addressed envelope and make cheques/POs payable to ZX Microfair

Exhibitors ring Mike or Moira on 01-801 9172 for stand availability!

W.A.R.

"Being a hero is easy. Staying alive is more difficult."

Skimming low across the mechanical landscape, I threw the joystick left, then right, right again, lurching out of the way of an oncoming assailant. As he sped away, I matched his horizontal position and blasted him with a rear laser. The tiny silver ship expelled a ploom of white smoke, and fragmented, sending shattered metal in all directions.

This is **W.A.R.**, from Martech. And it's very good.

The whole game plays on a small window, surrounded by a picture which attempts to be extra-ordinarily atmospheric,



but manages instead to look confusing, owing to the jumble of colours. It's a scrolling zap like a cross between **Lightforce** and **Uridium**. The actual gameplay is two-colour, although brief excursions into colour are taken every so often, allowing you to improve your armaments.

After a short time dodging and zooming, it's apparent that in the early stages it's a straightforward shoot-em-up.

Waves of differing aliens scream down the screen with various degrees of psychosis. The backgrounds will alter to bring variety, but when you take a long, hard look, it's a game we've all played before.

Yet there are two things that save **W.A.R.** from being classified a run-of-the-mill arcade game. One is the second-game feature, the other is the rather innovative way in which you can improve firepower.

The former is a quite simple idea. On the second side of the tape, you will find another copy of the game, – more of the same except much, much harder. You'll find yourself flying over a Spectrum circuitboard. Aliens swoop around in a most impressive fashion, and finish you off in a second.

The other idea is rather clever. You can opt to sacrifice some of your score in order to obtain superior weaponry. Each weapon retails for a different number of points. If you can hold out long enough, it is possible to amass a great enough score for you to purchase a large piece of artillery. It may be worthwhile, however, to get some superior, though small-scale guns to help in the short-term. It's up to you.

Scrolling bashes are suddenly in vogue again and **W.A.R.** is a tricky one■

A small playing window ● Amazingly fast action though ● Dodge the three aliens on the left ● Don't worry, they're easier to make out on the moving screen

FACTS BOX

A big surprise. It's been converted from the Commodore game, and improved no end. Scrolling blasts are fashionable

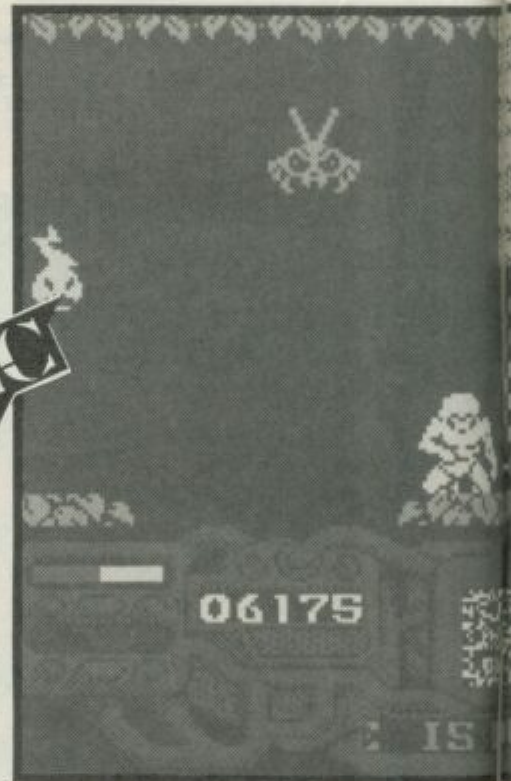
W.A.R.
Label: Martech
Price: £8.95
Memory: 48/128K
Joystick:
Kempston/Interface 1

Reviewer: Jim Douglas

★★★★☆







HINTS AND TIPS

● Get hold of some rocks as soon as possible!
● Head for the suit of armour, map its position, then zoom off to collect the bits
● Avoid the aliens – obviously. Although you can run through them, it'll lower your energy level rather too quickly

SACRED ARMOUR OF ANTIRIAD

Sacred Armour of Antiriad is brilliant. It has all the elements necessary to make it a classic in the true sense of the word.

The graphics are stunning. The movement is super-smooth. The plot is semi-believable, and it's so easy to play.

Included in the package – as a bonus – is a rather splendid comic strip magazine telling the rather complicated storyline in an exciting way.

To cut a long story very short, a passive and peaceful society established on earth by the year 2086 has its idyllic existance shattered by an invasion of an alien attack force.

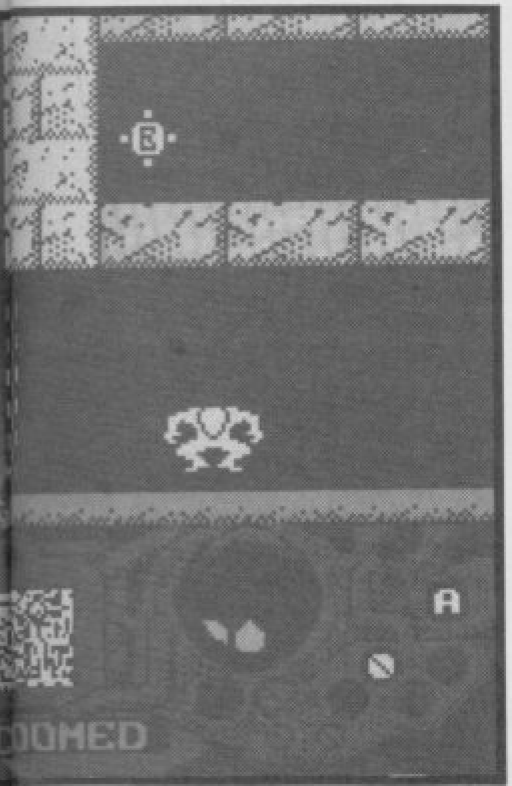
The populace are sent to work in the aliens' mines. Some rebelled, but one stood out as the most hardy and courageous. Named Tal, he was instructed by the elders to explore the land in search of the legendary item which humans worked so hard to perfect.

It turns out that the mystery object is ... a teas-maid? No in fact it's a suit of armour, rendering the wearer imprevious to just about any form of attack. As Tal your first objective is to find the armour, and then somehow overthrow the alien regime.

Antiriad is, on the surface, the same as many other games on the market. **Dynamite Dan II** springs to mind. You run left and right, jump on to platforms, generally behaving like a large number of other arcade-game heroes. In short, the gameplay is not what you'd describe as innovative.

But as soon as you start playing, the graphics will simply cause you to sit still and gase at the screen. There is no





time to lose, however, as the alien beings are only too quick other generally unpleasant things.

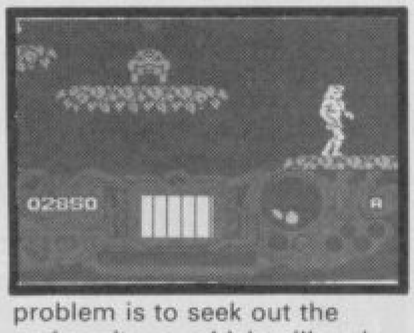
When you begin to move, things really become amazing. The character is pleasingly large, without being ridiculous. He's a little like the graphics seen in Gargoyle's **Tir Na Nog**, though maybe not quite as detailed. The animation though is superb. He runs around waving hair and all, and the way he jumps is particularly neatly done.

You quickly discover that you aren't going to get hold of the armour very easily, and you need a means of defending yourself – sharpish.

Picking on the most time-honoured tradition, rock-slinging is the best form of attack. (Fact: this dates back to times when the very first people roamed the earth, and is still in evidence today, at football grounds across the country.

Collect a few rocks and run around in a perfectly innocent manner, waiting for an alien to swagger up and attempt to alienate you. Then Tal can let fly with a truly impressive 'lob', causing a rock to be sent in whatever direction he pushes the joystick.

Once you've managed to get hold of the armour, the next



problem is to seek out the various items which will make you even more magnificent – anti-grav boots, particle negator, pulser beam and implosion mine are the vital elements.

The implosion mine is more important that all of the others. This is the item which you need to destroy the alien's base.

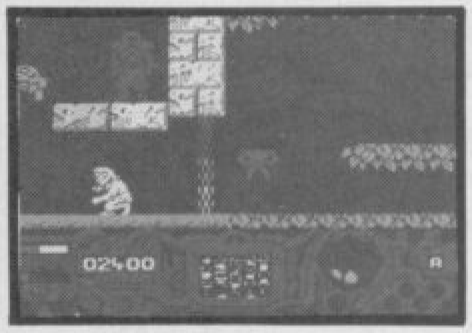
You can play the game either a straight shoot-up by bunging rocks at the local blobs, or go all the way and start looking for the armour in earnest (or even in the jungle).

Despite being simple to grasp gameplay-wise, **Antiriad** offers considerable scope for exploration. It's a must for all

ARCADE REVIEW

mapping freaks. Graphics are tremendous, attribute problems though still noticeable are minimal and the whole feel is just right.

In short, it's very nearly faultless■



FACTS BOX

Antiriad is brilliant. It's a tried and tested gameplay, but it's the best platforms 'n' ladders since Dynamite Dan II

SACRED ARMOUR OF ANTIRIAD
Label: Palace
Author: Chris Stangroom/ Dan Malone
Price: £8.99
Memory: 48K/128K
Joystick: various

Reviewer: Jim Douglas

★★★★★



XENO

Xeno is a simple game very stylishly presented. Imagine a sort of futuristic ice hockey meets shove ha'penny and that's it, the whole game.

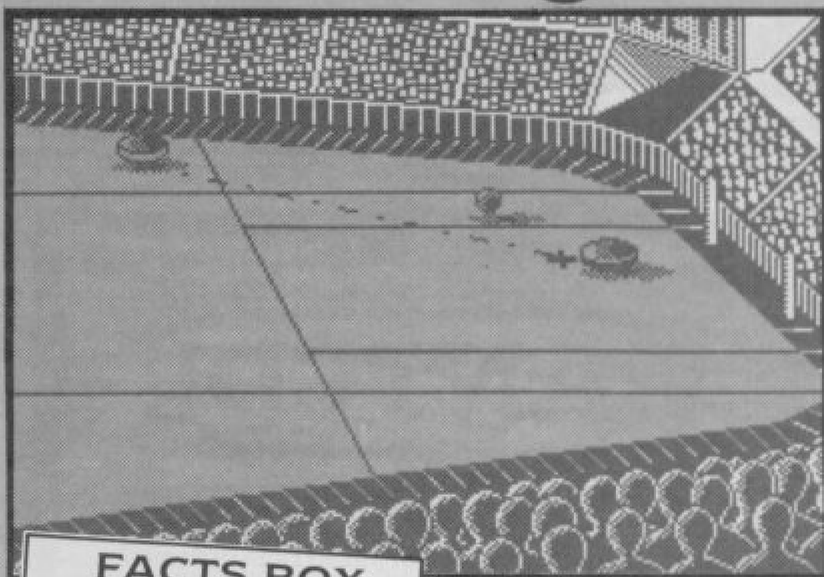
Xeno has supposedly developed from a pastime improvised by miners on Io – basically involving drunken men pushing ice blocks at a puck. Somehow the puck has to be shoved between two poles to score a goal. The modern version features the puck and two skimmers which, despite featuring the latest technology are about as hard to control as the original blocks of ice.

The chief feature of the game the first few times you play it is the large number of different ways it is possible to score own goals by whizzing helplessly out of control and accidentally striking the puck a glancing blow. I lost 30:1 with 25 being own goals, the first time I played.

There is a technique of course. You gradually learn how to carefully control the amount of energy you put into each push and how not to spend your time hurtling from one side of the pitch to the other.

It's particularly dispiriting when you aren't even in sight. The pitch extends over several screens and the computer 'camera' follows the action around the puck. If you aren't near the puck you aren't in the picture at all.

It looks pretty wonderful though. The illusion of perspective is well achieved as you seem to be looking over the heads of the crowd at the action. The scrolling is extremely smooth and the sense of frictionless movement adds to the feeling of movement across the ice.



▲ Defending the goal ● The track line suggests next shot could miss ● Check the notice board for the latest situation ● Beware: that ice is slippery and you may end up hurtling around the stadium

FACTS BOX

Excellent strategy game. A form of ice hockey, with lots of strategy and lots of speed. Simple, but I enjoyed it a lot

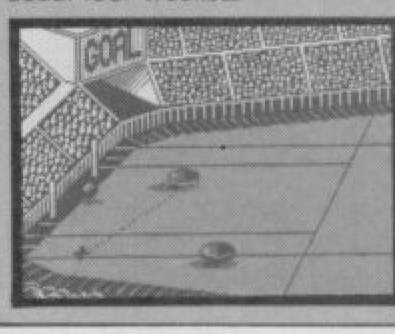
XENO
Label: Argus
Author: A 'n' F
Price: £8.95
Memory: 48K/128K
Joystick: various

Reviewer: Graham Taylor

★★★★★

Xeno has the marks of a classic game – you can develop different strategies to win. One you might find useful is going for the enemy skimmer rather than the puck. It's unsporting of course but I was able to live with myself.

Yep. I liked it very much. It's very well programmed and should last a bit longer than the usual four weeks■



C.O.D.E.

BO JANGEBORG AGE 23

BO Jangeborg, like Abba and Volvo, is a successful Swedish export. Fairlight, for The Edge and Artist written for Softechics won rave reviews and dozens of awards. With Fairlight II just days away we talk turkey with Bo about life the universe and the future of Swedish football

"The first computer I saw was probably on television I must have been 16 or 17 when I got interested. I just learnt from a mixture of the Spectrum manual and the Zilog Z80 programmers reference card – it just lists commands and timing but is really useful. *Machine Code for Absolute Beginners* is another good book on the subject.

Probably the best way for anyone to learn code is not a course but a mixture of books and designing your own simple routines, making you understand small things step by step and go on from there.

The first thing I wrote was **The Artist** although it grew over a long period and changed so it wasn't as though I conceived the whole thing in one go. The first version was utterly different from the final edition. It is also the first program I am proud of."

VITAL DETAILS

Which other programmers(s) do you admire?
Mike Singleton
What is your favourite program?
Reach for the Stars (an empire building game)
What arcade game do you get the highest scores on?
Gauntlet, probably
What progam would you most like to have written?

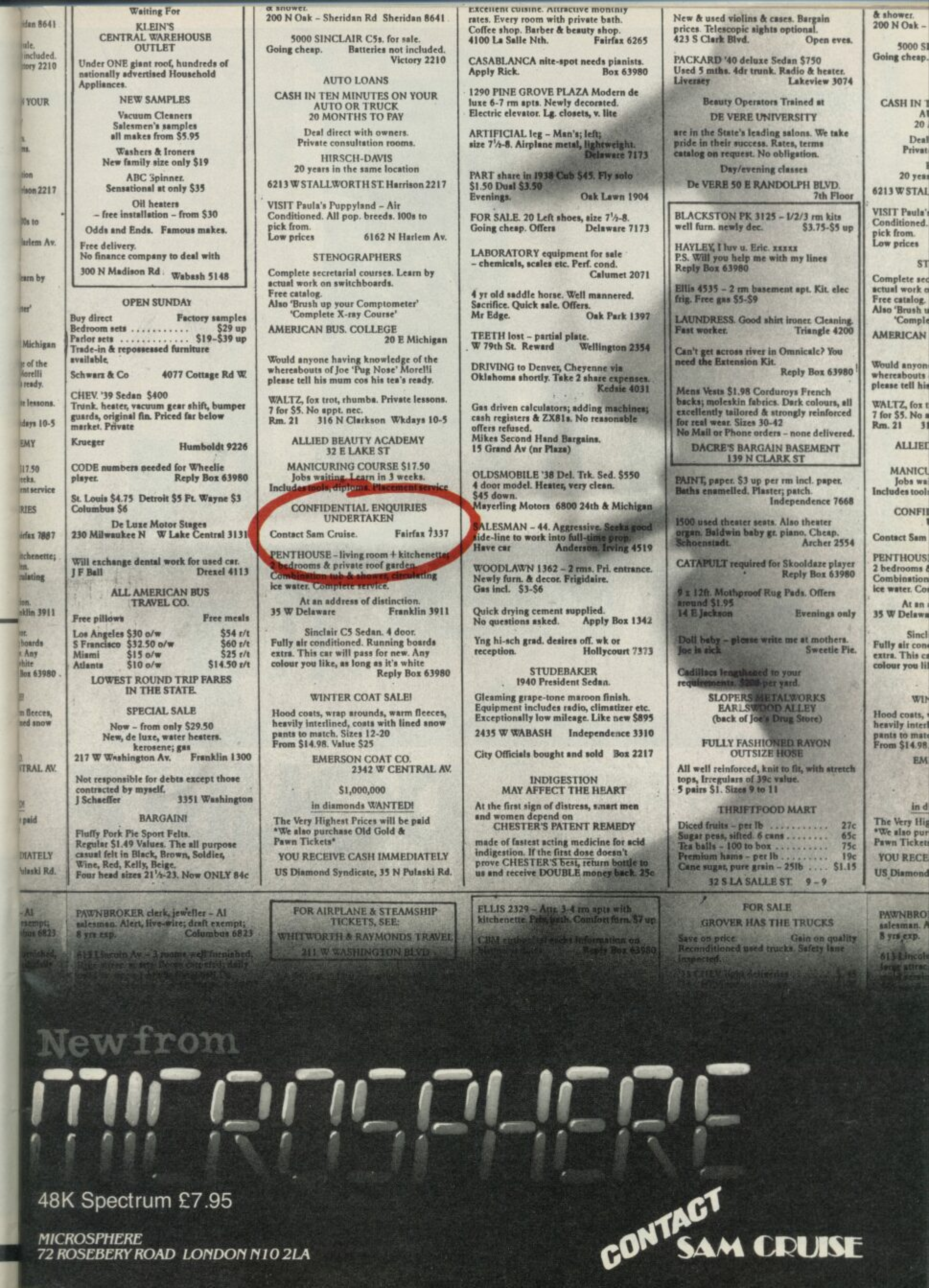


▲ **Bo Jangeborg (recluse) – aka Benny from Abba-dabba-doo**

Lords of Midnight, I think.
Greatest programming achievement
The Grax programming language – my own language for graphics programming
Favourite TV program
Any TV football match in which my local team from Goteborg are playing. The best was when they were in the European Cup playing Barcelona – they lost but it was exciting all the same
Favourite movie
Star Wars except that I couldn't watch it over and over again – perhaps Into the Night by John Landis
Favourite record
Breaking Barriers by a

T.A.L.K.

Swedish group called Tribute (sort of jazz rockish by the sound of Bo's walkman)
Favourite Book
The Foundation Trilogy by Asimov
Most hated program
World Cup Carnival – it was a disgrace to the programming community
Hobbies
Playing wargames and I also part own a small computer shop in Sweden
Worst subject at school
Russian, I was absolutely terrible at it
Favourite thing about the Spectrum
The general architecture is very open making it easy to try new ways of doing things
Worst thing about the Spectrum
The painful layout of the screen in memory
SOFTOGRAPHY: ARTIST I (1985); FAIRLIGHT I (1985), ARTIST II (1986), FAIRLIGHT II (1986)■



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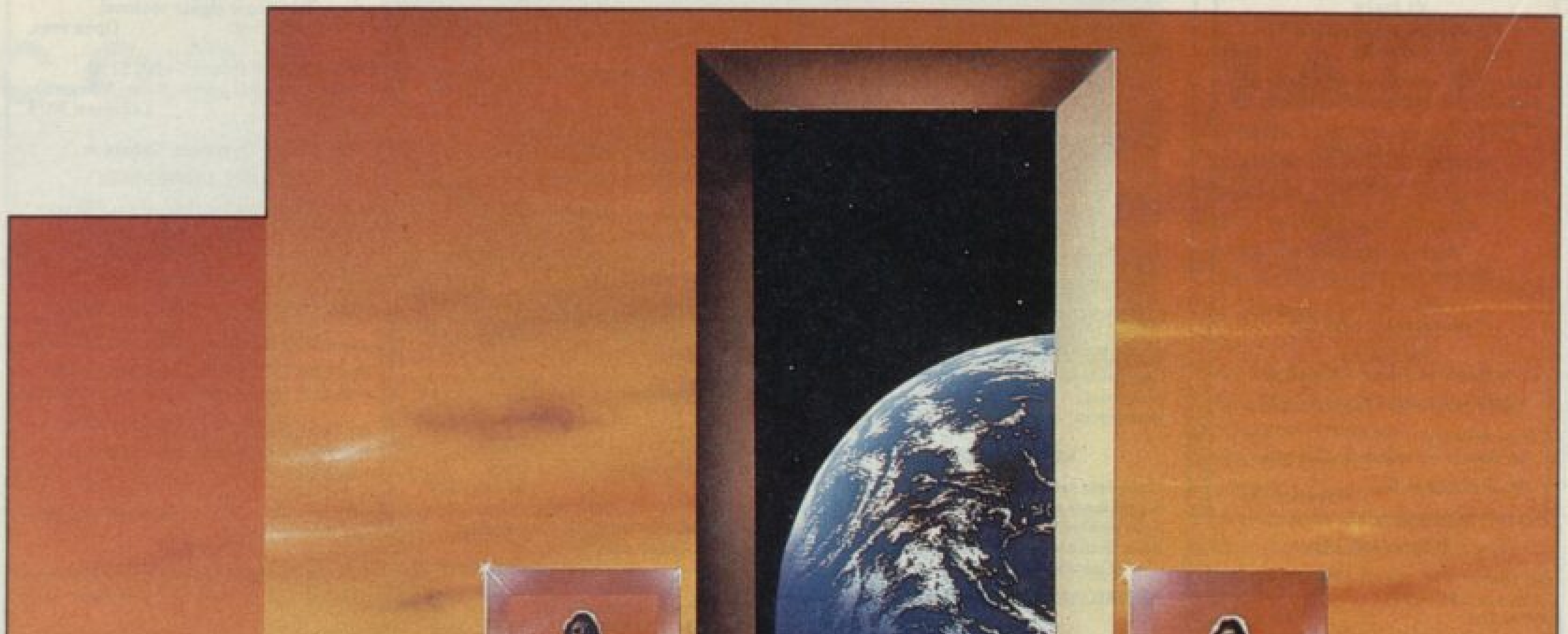
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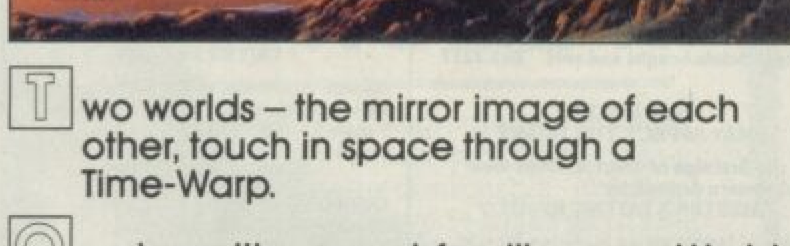
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Do you ever wish, dear readers, that you could simply crawl into a darkened box, and be very very quiet. No? I can't say I'm surprised.

On the other hand, you could climb into a tank and mow down foilage, flatten motor cars and bust through buildings – trundling along with that amazing 'squeaky-squeaky' sound.

And wouldn't it be simply splendiferous, fellow straw-dogs, to be able to put in a little practise with your handy Spectrum, and the utterly brilliant *Ikari Warriors* from Elite? It's Elite's follow-up to last year's Christmas No 1, *Commando. Ikari Warriors* isn't out yet, but you could win a copy of the game.

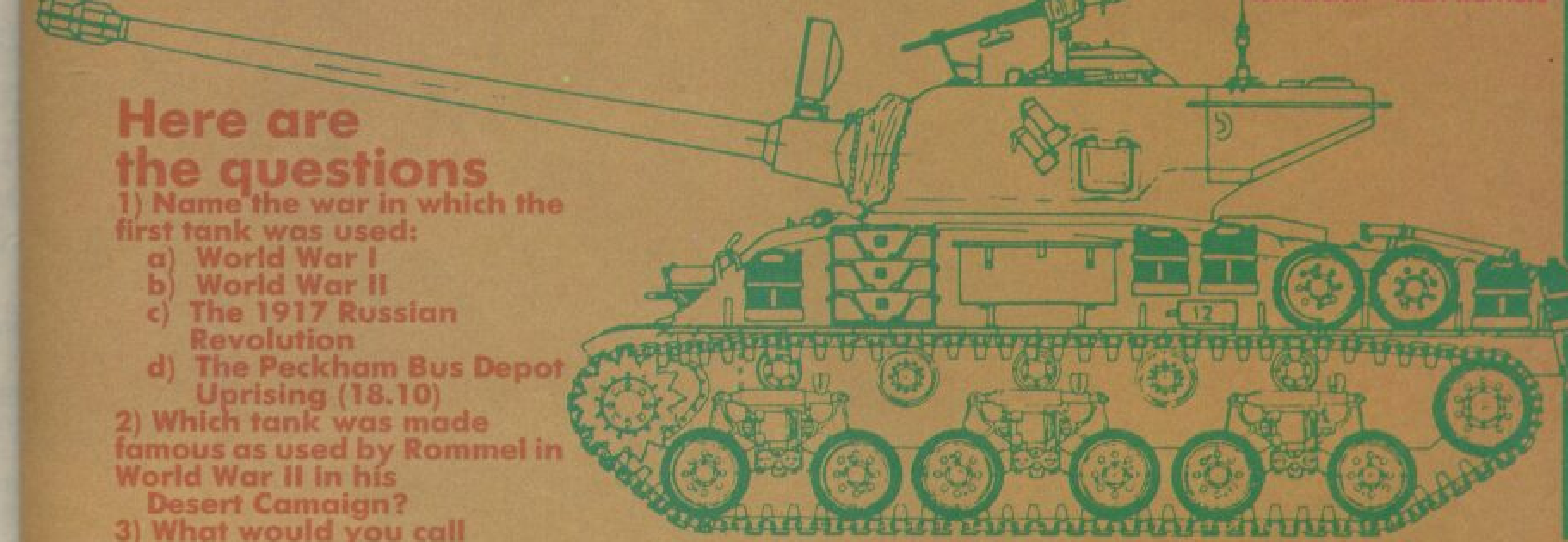
Yus. Everything you have ever wanted to wage a tactical battle on the living room carpet is here.

We have ten 1/35th scale kit model Sherman tanks to win, and fifty copies of *Ikari Warriors* to give away too!

The first ten people to send the correct answers to the following questions will receive both the kit and the game – the next forty, the game only■



▲ Driving your tank through Elite's new coin-op mega-conversion – Ikari Warriors



Here are the questions

1) Name the war in which the first tank was used:
   a) World War I
   b) World War II
   c) The 1917 Russian Revolution
   d) The Peckham Bus Depot Uprising (18.10)

2) Which tank was made famous as used by Rommel in World War II in his Desert Camaign?

3) What would you call amphibious tanks?
   a) Preposterous
   b) Ducks
   c) Water babies

4) In which of the following films would you NOT find a tank?
   a) A Bridge Too Far
   b) Kramer versus Kramer
   c) Best Defence
   d) Kelly's Heroes

5) Which two American generals had tanks named after them?

6) Spot the odd tank out:
   a) Panzer
   b) Leopard
   c) Churchill
   d) A metallic blue Mini-Metro
   e) Centurion

WHAT TO DO

Simply fill out the coupon* and send it off to: Tanx For The Memory Compo, Sinclair User, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. Closing date January 5, 1987 (Next year!!)

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* EMAP and Elite type characters – no entries, tanx


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STAR

SINCLAIR USER CLASSIC

Starglider is one of a small but growing number of programs that make people buy Atari STs.

At the *PCW* show in September it attracted much attention as a sort of ultimate line-graphic space game – bigger images, smoother movement, more complex features and so on.

Now that game has been converted to the Spectrum and the truth is, in terms of graphics and gameplay, the two versions – Spectrum and ST – are virtually identical.

Furthermore, in terms of smoothness of animation **Starglider** easily outclasses **Elite.**

Starglider has a complicated plot. That's virtually mandatory for a game that costs £14.95, and comes in a box with assorted manuals and a complete 64-page story book.

The plot is relatively interesting and worth summarising. There is this plant called Novenia where the good guys once lived. Then there are the Egrons, your standard ugly empire builders. The planet Novenia has previously been immune to attack having armed itself with a whole series of vicious defensive systems, however in an act of total ecological soundness the defensive computers have been reprogrammed to allow the starglider – a rare species of bird – make its rare migratory visits.

FACTS BOX

A classic among classics. The best 3D line graphic game ever. Better than Elite, with the emphasis on action

STARGLIDER
Label: Rainbird
Author: Realtime
Memory: 48K/128K
Joystick: various

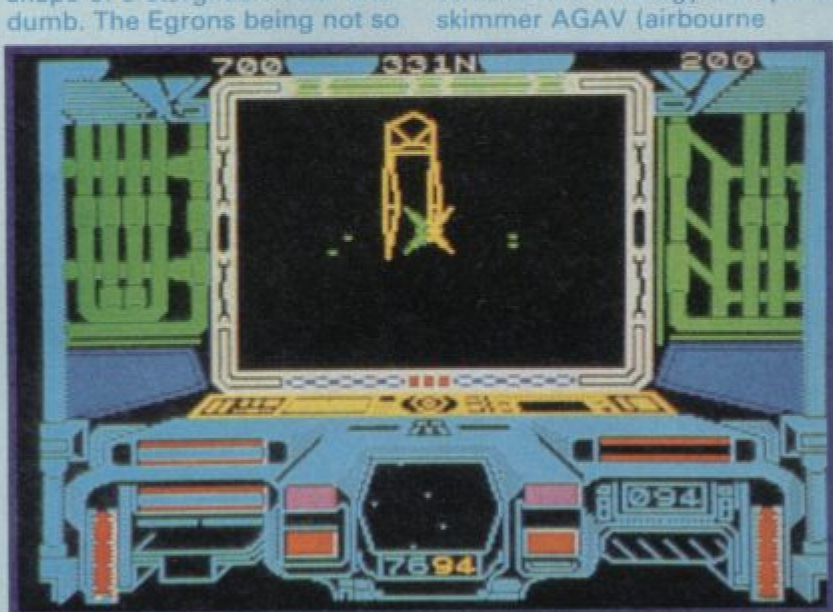
Reviewer: Graham Taylor

★★★★★

The computers were told to let through anything in the shape of a starglider. This was dumb. The Egrons being not so dumb have started building bird shaped spaceships. You have to stop them. You, being Jason and Katra: teen heroes in command of a dodgy old space skimmer AGAV (airbourne ground attack vehicle), get to take on the Egron Stargliders and you don't even have a proper manual.



Flying at full speed ● You manage to catch up with the starglider ● But you need three missiles ►



Starglider has been programmed for Rainbird by 3D specialists Real Time (**3D Star Strike, 3D Battle Zone, Star Strike II**) and the result, as you'd expect is tremendous. Without question, it's the best thing Real Time has ever done.

Any comparison with **Elite** is partly a false one. Take a quick look at some of the more geometric space ships and you might be misled but **Starglider** isn't a particularly strategic game. What it is, is one hell of a shoot 'em up, a shoot em up with brains.

◄ The missile launch screen ● Guide the missile using the TV camera sights ● Time and control are limited

SPACE H

Space Harrier exceeds even **Gauntlet** in terms of ultimate arcade credibility. It presents state of the art – even psychadelic – graphics in a landscape utterly strange. Abstract and yet tremendously believeable. The coin-op machine features incredible hydraulic rams which twist and turn the cockpit in which you sit according to the movements of your joystick. The result is an incredible sensation of movement and a big adrennelin high.

What happens when you try to do that on a Spectrum? Surely it must be the most difficult conversion imaginable.

Elite has the licence for the game and the Spectrum version is a remarkable technical achievement.

It mangages to do a fair impression of the strange grid – like landscape of the original which scrolls towards your figure, seemingly animate objects in three dimensions – the chinese dragon is excellent – and most significantly, do the whole thing at speed and without an abundance of attribute clash.

The original game has seventeen levels, the Spectrum version has 'more than ten'.

Most of the elements of the original are retained: frogs, rocks, the peculiar looking mushrooms, and of course the swirling, tail-twisting oriental carnival dragon.

The remarkable dragon, first seen in the second screen is constructed from a dozen or more segments, each drawn in a kind of outline form and carefully positioned and animated to give the impression of movement firstly out of the distance and also along its length.

The best aspects of Elite's conversion are the central figure and the wierd tilting landscape. Your man is large

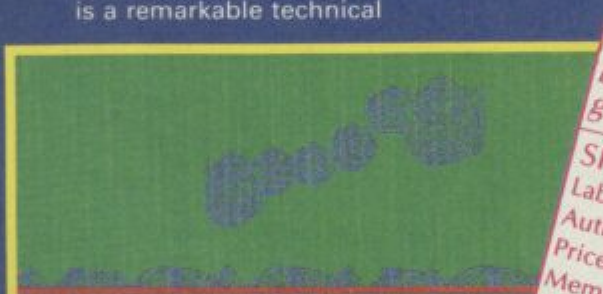
FACTS BOX

An impossible conversion surprisingly well done, the problem may be in the gameplay. The graphics are terrific

SPACE HARRIER
Label: Elite
Author: In-house
Price: £8.95
Memory: 48K/128K
Joystick: various

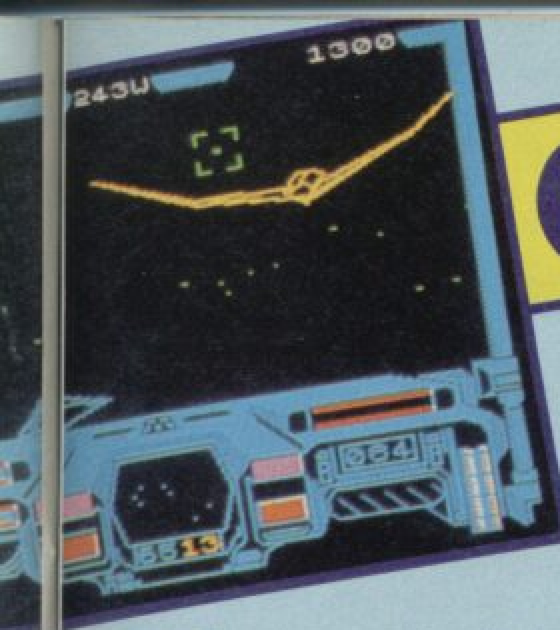
Reviewer: Graham Taylor

★★★★★





GLIDER



ARCADE REVIEW

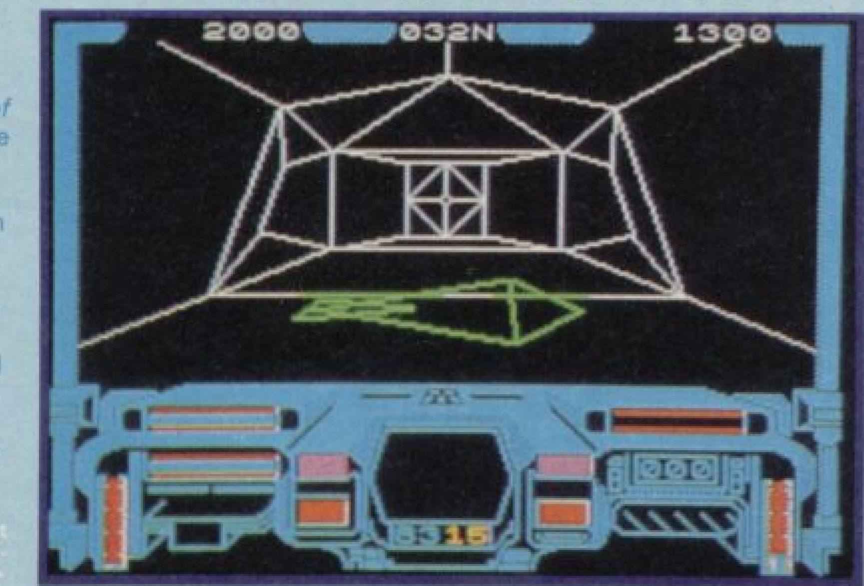
The screen emulates closely the Atari ST version. The cockpit frames your 3D view of the outside world. The Novagen defences are a mixture of **Elite**-like geometric shapes, diamonds and squares and vaguely *Star Wars*ish mechanical monsters. The original Walkers from *Return of the Jedi* seem to have been the inspiration of a couple of the devices, in particular the stompers – two giant legs with a cab on the top that trudge across the screen dispassionately obliterating all before them.

Whilst the task on each level is to destroy the starglider, actually the game is really all about scoring points. It just so happens that destroying the starglider gives you zillions of points.

Many elements of the game are very familiar, you have lasers and missiles – lasers wear out slowly but missiles can only be used once. You are supplied with two and the starglider needs three missile hits to be obliterated. Some of the other bigger devices are also immune to everything but missiles.

The missile launching sequence is one of the best moments of the game. Having got the enemy in your sights, going to missile attack changes the screen to a sort of 'missiles-eye-view' of the proceedings. You get a limited time and a limited degree of control of its direction but destroying a stomper is a truely uplifting experience. As with all the explosions in **Starglider**, the thing explodes into hundreds of tiny fragments...

There is, inevitably, a docking sequence – to replenish missiles (pick up two more) and restore defences. This involves finding a silo and entering it. The problem is that the silo is trundling around and around as though in a permanent skid. In a sort of horizontal version of the **Elite** sequence you have to try to cope with the spin and zoom into the thing when the front is round your side. It's difficult but probably not as difficult as docking in **Elite**.



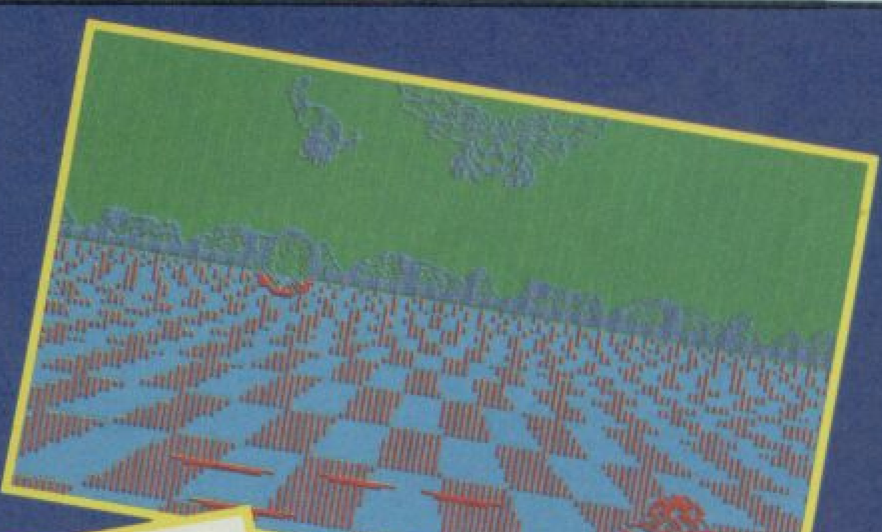
Inside the missile silo ● Collect missiles and interrogate the computer ▸

Control is mainly joystick with keyboard controls for speed. This doesn't in practive get in the way of the pace and energy of the game but getting a joystick you can stick down on the table so that one hand manipulates that whilst the other controls speed is definately the most effective way of getting high blast points.

A 128K version will contain music and speech and extra missions although the details hadn't been finalised at the time of writing. The 128K version should be on the flip side of the tape, and it should be incredible.

Starglider looks astonishing. It just doesn't have any serious competition and I think it must be in my top five releases of the year so far■

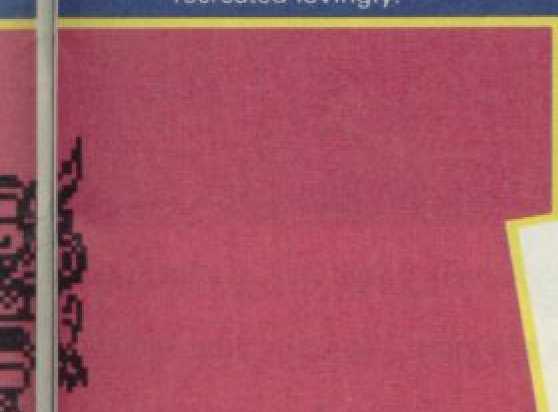
HARRIER



and fully detailed and does a particularly effective tumble when toppled by a roving mushroom, brick or similar object. The floor tilt – when the whole landscape seems to change in perspective – is recreated lovingly.

So is this a rave review? I have some doubts. For five minutes I thought this game was definitely classic material. After ten I wasn't so sure. After fifteen I had real problems. The hitch is the gameplay.

It is quite possible to score vast amounts and get through a lot of screens (I did four, no trouble) very early on just by positioning yourself just off centre and stabbing the fire button as fast as you can





I felt, not being once of those arcade wizzes who always get the high score on anything on the first attempt, that I did too well. The sense of challenge was already beginning to wane and I felt that there really wasn't really very much strategy to be developed.

For a while, it is astonishingly thrilling and I dare say other magazines will give it all sorts of mega awards.

I think that it may not have much staying power■



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It'll trundle around, go backwards and forewards, know when it's bumped into things and you can control it from your Spectrum.

We think it's so great we thought about calling it Norman but you can call it whatever you like.

We've made it easy to build, you just need a few bits, a soldering iron and some patience.

And to make the whole thing even easier we've arranged to have a kit of all the parts you'll need made up and available at – dare we say it – a very resonable price■

BUILDING THE RUBOT

Before you can build your Rubot, you'll need all the bits. These include not just the guts of the beast, but the tools to do the job with. Although it is possible to knock together Norman with just a pair of scissors and a knitting needle heated over the gas stove, it's not recommended.

THE TOOLS

What you'll definitely need in the way of tools includes:

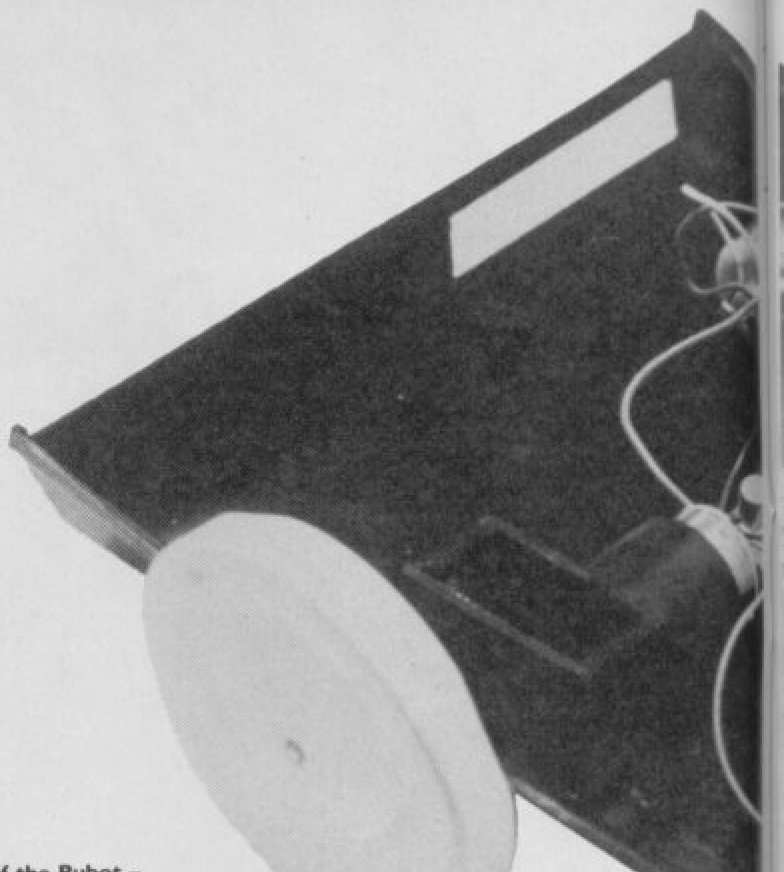
- A soldering iron. 15-25 watts, with a fine tip will do nicely. Available at almost any DIY/hardware/electronics shop
- Wire cutters. The most appropriate kind are called 'side snips', or side cutters. Found in the more specialist (Tandy's etc) shop (not the giant Great Escape sort, the small scissor-sized ones)
- A sharp knife. Stanley knives are ideal, from DIY shops everywhere
- Veroboard spot cutter. Only available from specialist shops. A 5mm drill bit can be used instead. Note: you'll only need this if you're building Rubot from scratch – the spots are already cut on the special kits.

A further list of desirables, which will make your job a lot easier but which can be left out if finances so dicatate includes:

- A desoldering pump. This can remove solder if a component needs to be replace or moved
- Long-nosed pliers. These make bending component leads much easier and more accurate
- A small bench vice. If you've never done it before, you'll soon find that soldering needs at least one extra hand – two are just not enough!

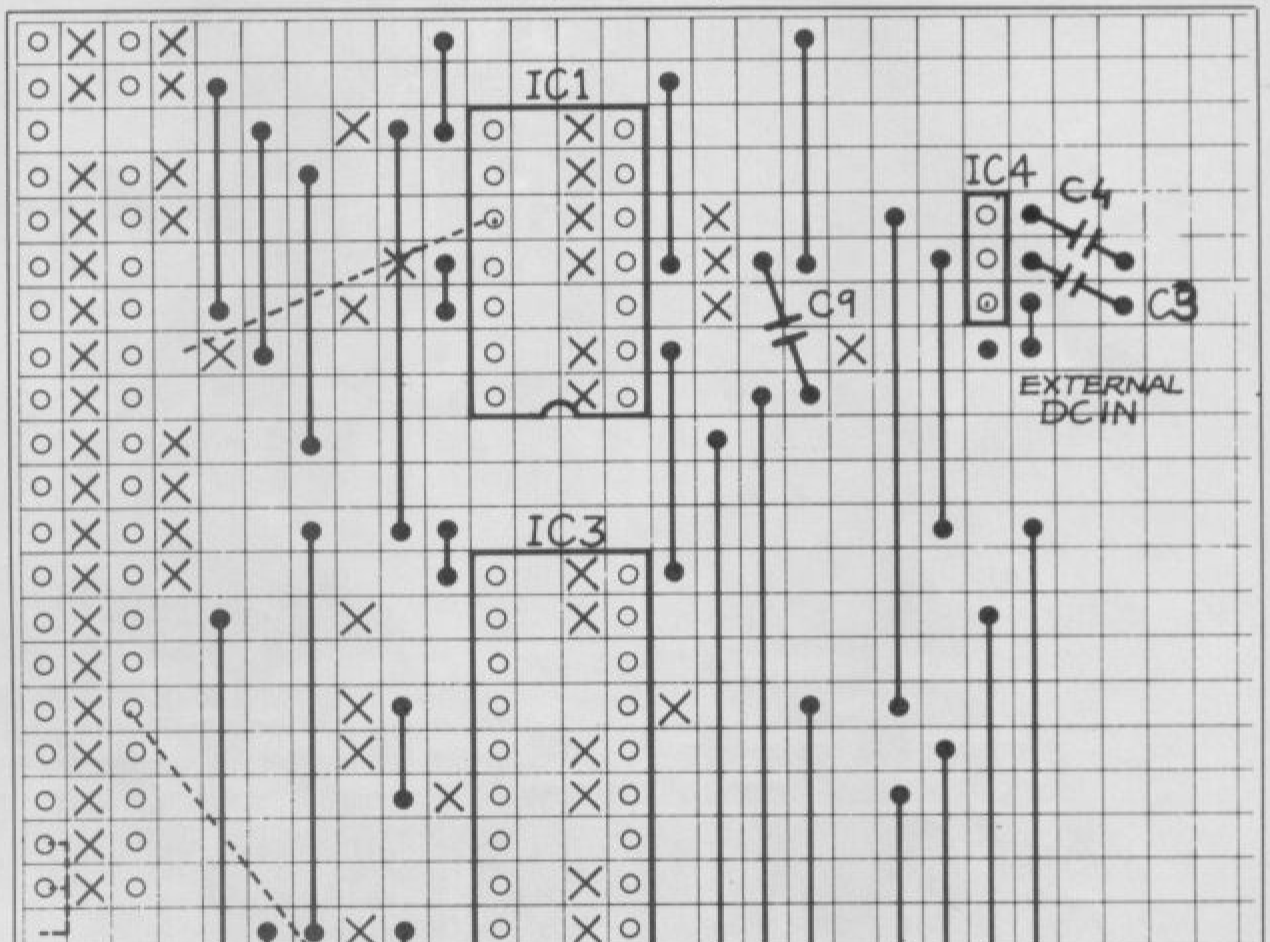
The budding roboteer will also need to beg, borrow but not steal (only the truly dedicated need buy) a test multi-meter. This needs to measure up to 15 volts, check resistance and measure direct current or up to an amp or so.

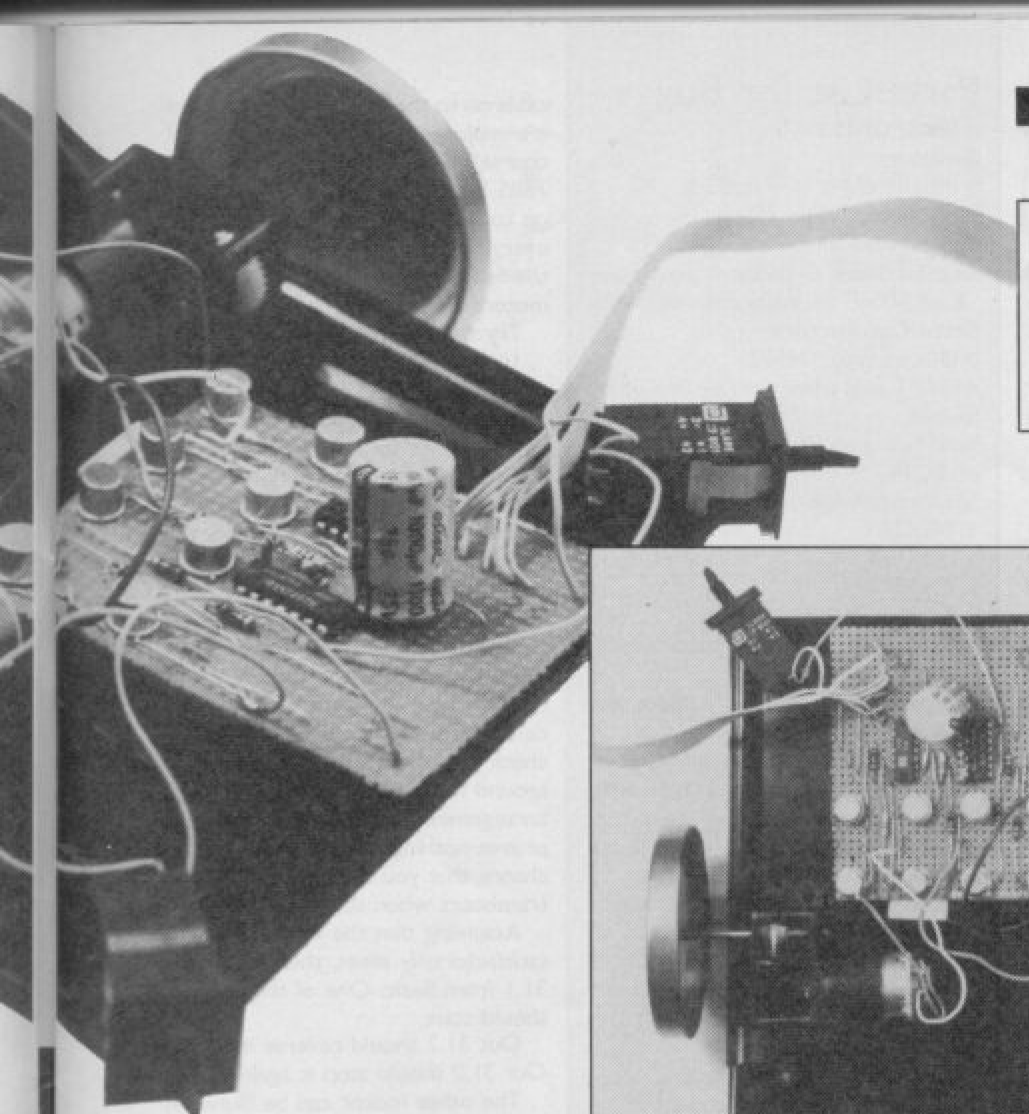
Got the lot? Good. Before you start sticking diode A into hole B, let's get a few of the basics of electronicing down pat. First, there's the gentle art of soldering, or how to make the perfect joint. A joint, by the way, is a soldered connection just in case you thought otherwise. In theory, it sounds quite simple. Heat two bits of metal up, pour molten solder over them, and allow to cool,



General view of the Rubot – jam jar lids 'n' all►

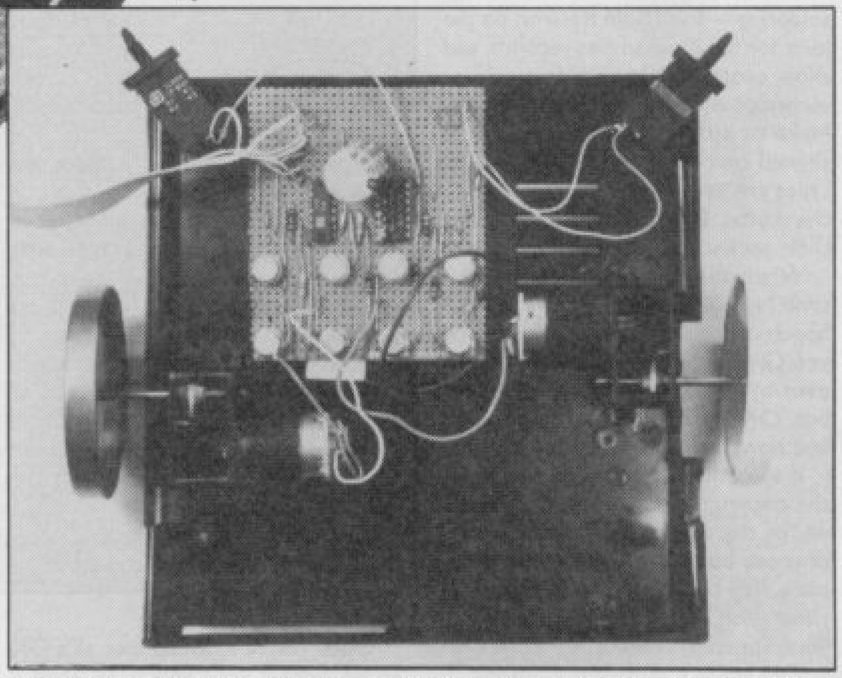
▼ Plan diagram of the edge-connector board – the smaller one



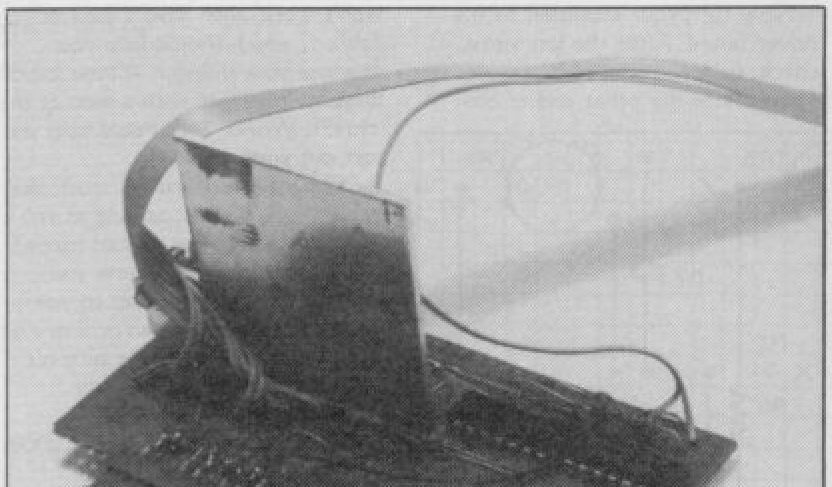


Key to Diagrams 1 and 2

IC1: 74LS32; IC2: 74LS125; IC3: 74LS273; IC4: 7805; IC5, IC6: 7416 or 7406; D1-D8: IN4001; R1, R2: 10K; R3-R10: 150 ohms; TR1-TR4: PNP BFX88 or BC143; TR5-TR8: NPN BFY51 or BC142; C3, C4, C6-9, C11, C12: 100nF; C5: 1000 uF. Note – C1, C2 and C10 don't exist!



▲ **Plan view of Rubot showing the arrangement of the main circuit-board, motors and sensors**



◀ **The edge connector interface unit**

but there are a few things to watch. First, all the metal surfaces must be clean and free of grease or corrosion. As you'll be using new bits, that shouldn't be a problem. Second, there's the technique.

Some people push solder on to the end of their irons and just dump it on to the connection, Wrong. The trick is to apply the iron first, allow the connection to get nice and warm, and then push the solder on. Another fatal no-no is to use too much solder. Just put enough on to cover the surfaces around the area of the joint. It should flow on easily, if it doesn't then either the connection is too cold, or one of the surfaces is dirty.

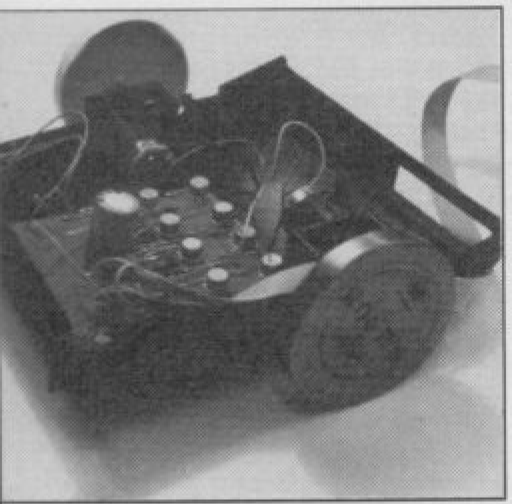
Now comes the ancient and noble craft of veroboard bashing. To use the veroboard you need to cut the tracks at certain strategic points. These are marked as crosses on Diagrams 1 and 2, and are put there by dint of the spot cutter (or drill bit). To do the deed, place the tip of the tool in the hole corresponding to the break-to-be, and apply a *little* force. Then twist the cutter a couple of times. You should be left with a small crater, slightly wider than the copper track. Make sure that there aren't any little bits of cooper swarf left floating around, and that the track is completely cut. After a while, it'll become second nature.

ASSEMBLY

Now the fun begins. Take the smaller of the two boards, and cut all the tracks where marked.

First put in all the wire links. These are best done by cutting a piece of wire about 1 cm longer than the length needed on the board, and bending both ends through 90 degrees so that the link just fits into the board. Then solder both ends, and trim off the spare bits as close to the board as possible. Then solder in the IC sockets and the Spectrum edge-connector plug. It's very important to make sure that they're in just the right position, so doublecheck before applying the solder.

Before soldering in the edge connector, you'll have to remove one of the pins. If you look at the edge connector, you'll see that there's a gap in the two rows of pins. Hold the connector with this gap to your left, and the pins facing straight up. The pin that needs to be removed is the eighteenth away from the gap in the row of pins facing you. Carefully cut it with the wirecutters at the point



where it meets the plastic body of the connector.

Next, solder in the capacitors and the resistors. The resistors and small capacitors can be soldered in either direction, but the 470uF capacitors need to be plugged in the correct way round. IC4 – the 7085 – also needs to be correctly inserted with the notch as shown on the diagram.

It doesn't have a socket, and must be soldered in directly. Solder it in with the metal plate facing away from the edge connector, and then bolt the heat-sink on to it.

Three capacitors need special attention. C5 must be connected the right way around – with the negative pin being furthest from IC5. C11 and C12 must be soldered directly on to the terminals of the motors themselves. Cut the leads of the capacitors to about a centimeter in length before soldering them on.

Solder in the transistors so they stand about a centimeter clear of the board – if you solder them in flush with the board they're more likely to be damaged by the heat of soldering. It's also easier for the metal cans to short out on adjacent wires if the transistors are too close to the board.

Now repeat the exercise for the larger board. Put the diodes and transistors in last. The transistors need a little bit of extra care during soldering – don't hold the iron on the joint for longer than five seconds, and allow everything to cool for ten seconds between soldering each leg. Make sure that those trannies are aligned correctly, and that the right types are in the right place. Ditto for the diodes. DON'T plug the IC's into their sockets yet.

When all that's done, it's crunch time Number One. Get your Spectrum ready, but don't turn it on yet. Give your boards a second check over by eye for shorts or misplaced bits. OK? Plug in the interface board, and now turn the computer on.

If something is obviously wrong – the copyright screen doesn't come up, or the power supply makes an ominous buzzing, then turn off at once. Try unplugging the board, and turning on the computer again. If your Spectrum (who?) is still ill, then you've made a serious mistake on your board (PS, we don't accept any responsibility, if that happens – 'cause we're nasty like that). If your Spectrum recovers, then check the board for shorts or misroutings on the lines and leads coming from the edge connector.

Parts List for Buggy

Electronics

Resistors
8 off 150 ohms ¼ Watt 5%
2 off 10K ¼ Watt 5%

Capacitors
1 off 1,000uF 6 Volts
8 off 100nF 16 Volts ceramic

Semi Conductors
8 Diodes type 1N4001
4 PNP 1 amp transistors eg BFX88 or BC143
4 NPN 1 amp transistors eg BFY51 or BC142

Integrated Circuits
1 74LS32
1 74LS125
1 74LS273
2 7416 or 7406
1 **Voltage regulator** type 7805

Hardware

1 Edge Conector to link to Spectrum: 23 Way DS edge connector with wire-wrap pins and polarising key at Position 3. Veroboard 0.1 inch, 5.5" long x 36 strips wide – coppered.
Switches for bumpers: 2 single pole/normally open (push to make)
Ribbon Cable: 2 metres of 10-way
Wiring: 2 metres of flexible connecting wire
Baseplate (Buggy base)
2 Wheels for drive power
1 pivot wheel
Heat sink (small piece 5swg aluminium M3 screw and nut)

Once you're satisfied that all's OK so far, unplug your Spectrum, then the board, and plug in the ICs. Repeat the test.

Now turn your attention to the driver board. After the last visual check, solder on the ribbon cable. Then solder the other end of the cable on to the interface board (when it's unplugged from the Spectrum, of course!). Attach the heatsink to the 7805 IC. Solder the sensor switches on to the driver board, and plug everything in. Turn on the power to the Spectrum. Don't connect the motors up yet.

Try the test program:

```
10 PRINT IN 31;" ";:INPUT " ":
GOTO 10
```

You should get a screenful of 255's, which change to 223's, 239's and 207's as the sensor switches are pressed. If you don't get 255's, or 225's and nothing else, then check the wiring around IC1 and IC2 on the small board.

Next, switch everything off, and connect the motors. Switch on again. If one or other of the motors starts, try switching on again. If the condition persists switch off and check the wiring around IC3, the area around the transistors and the arrangement of the diodes. If that proves nothing, then there's a faint chance that you damaged one of the transistors when soldering them in.

Assuming that the motors stay satisfactorarily silent, then try *Out* 31,1 from Basic. One of the motors should start.

Out 31,2 should reverse it, and *Out* 31,0 should stop it again.

The other motor can be likewise tested by *Out* 31,4, *Out* 31,8 and *Out* 31,0. To make the motors both do something at the same time, just add the numbers together, so *Out* 31,5 should get both turning.

f one or the other of the motors won't work, then have a look at Table 1, which should help you diagnose your disaster. A little logical thinking, together with a read of the 'How it Works' bit, should help you sort out your problem.

Debugging hardware is much like debugging software, as long as you have an idea of what should happen!

It all works? Great! How you mount the hardware is up to you – the simplest way is on an ordinary bit of wood or similar (make sure it's non-conducting...). but a little imagination goes a long way.

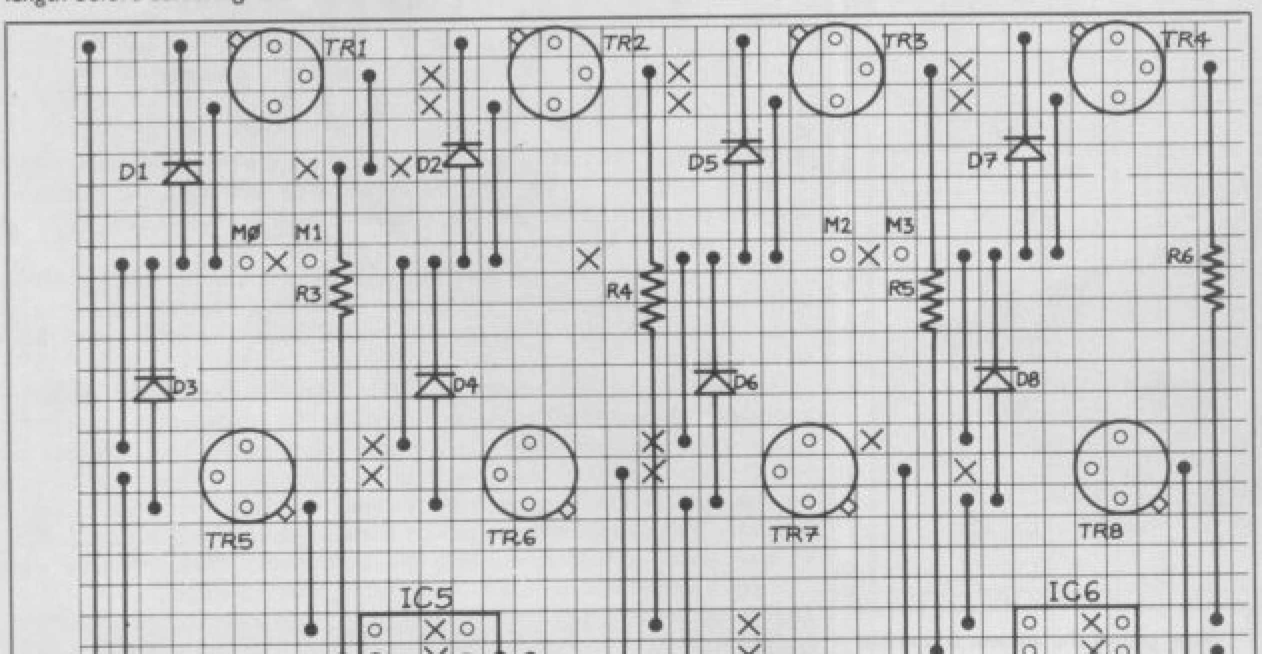
Our Rubot lives inside an old ZX81 casing!

Rupert Goodwins

When inserting components note:

On the transistors, it is vital to get each tab on the metal/ceramic cans of the devices the same way round as in the diagrams.

Pin 1 on the ICs is marked by a dot or blob. On diodes the point of the triangle – symbol end is marked on the device by a stripe.



▲ **Plan diagram of the main circuit arrangement**

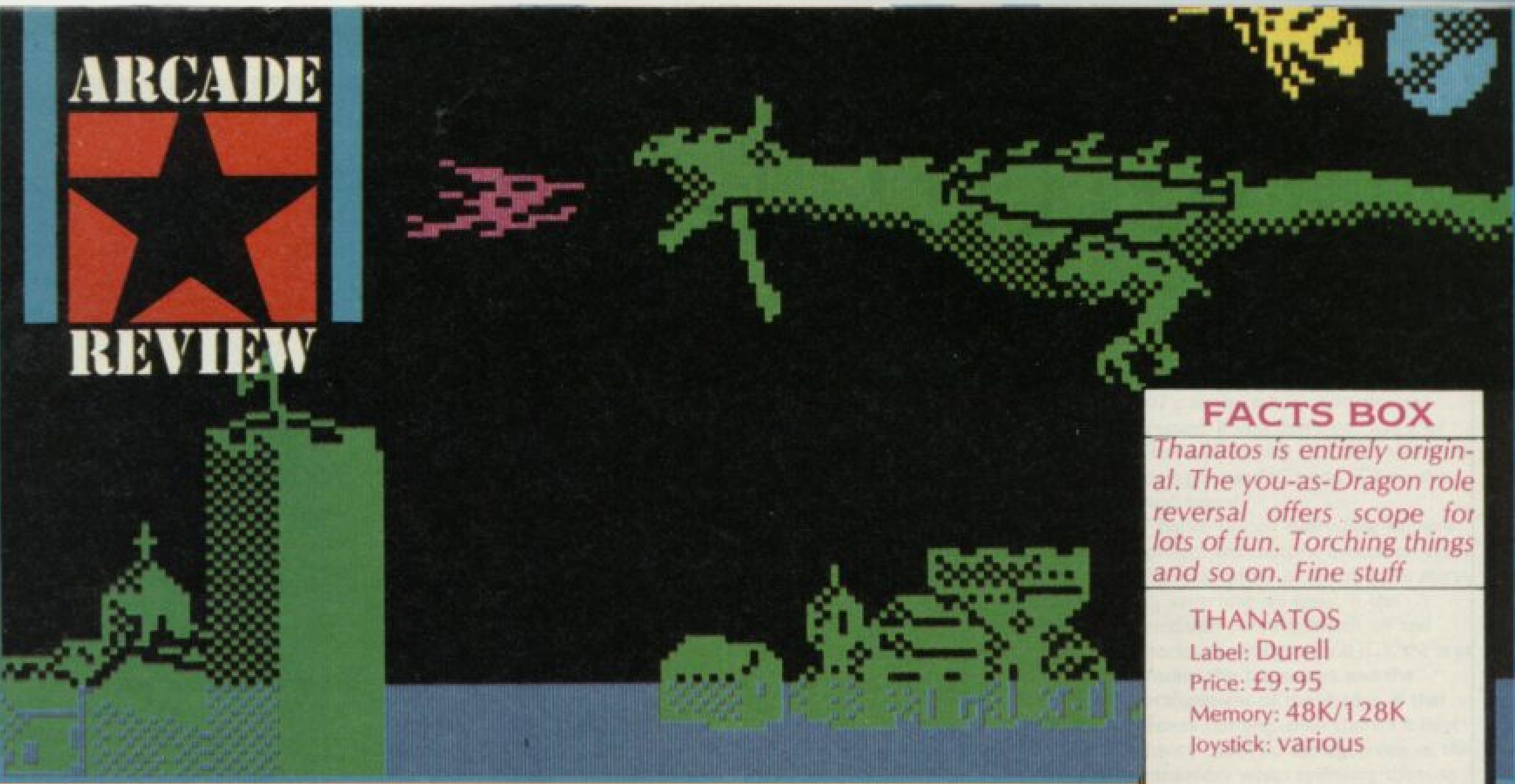
NEXT MONTH

● Buggy up-date: In Part 2 we have an idiot's (that's us) guide to how the circuit actually works

● Also we'll have a program to type in for your Rubot to learn■


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ARCADE REVIEW



THANATOS

FACTS BOX

Thanatos is entirely original. The you-as-Dragon role reversal offers scope for lots of fun. Torching things and so on. Fine stuff

THANATOS
Label: Durell
Price: £9.95
Memory: 48K/128K
Joystick: various

Reviewer: Tim Douglas

★★★★☆

"Long, long ago, when dragons ruled the earth, and men and women were but helpless creatures . ."

How many times have you read this sort of storyline at the start of an adventure game? Wouldn't it be nice, given that humans were altogether useless, to take the role of the dragon, and be able to stomp down villages, attack castles, and do all the rest of the reptillian repertoire?

Durell's latest lets you do just that. And I can let you know that it is very satisfying indeed. Featuring what must be the hundredth revolutionary scrolling routine to appear in the last 48 hours, the game has some rather splendid graphics.

Durell seems to have employed virtually every fantasy sub-plot in order to make the game as interesting as possible. Initially, you must wreak a bit of havoc amongst the local people, before moving on to find Eros, an enchantress who will guide you to more wonderful lands. Eventually, you will be taken to a book of spells, and a magic cauldron.



See? It's all in there.

Obviously, the villagers don't take too kindly to having their houses burned to the ground, and their peace-loving community wrecked by a lumbering great lizard. As a result, at the first hint of a little pyrotechnics on your part, they're out on the streets armed to the teeth, slinging arrows and spears.

Occasionaly, you will be confronted by A Mythical Creature. For the most part, these looked rather closely related to bumble-bees, but they were quite tenacious, and ended my games more frequently than I care to mention.

The graphics of **Thanatos** are really something. In the lower portion of the screen, your heart-rate and flame-capacity are indicated by a pumping heart and what looks like a glass full of fire, respectively. (Actually, I think it is supposed to be a belly of the dragon, but it's a little hard to tell.)

The graphics really come into their own when you see the dragon flying over the landscape. The wings flap with superbly convincing swooshing sound effects, and the dragon waves his head around too.

The graphics for the background, if a little sparse, are attractive, and the little characters on the ground hurl their weapons upwards in a most satisfying manner. Of course, the most fun can be gleened by scorching the little bodies, or picking them in a claw, elevating them to a great height, before releasing them, and watching their descent. I told you it was fun.

Although the game is really two dimensional, you are given an impression of depth 'into' the screen by the fact that a distant object will move across the screen slower than a nearby one. It works rather well.

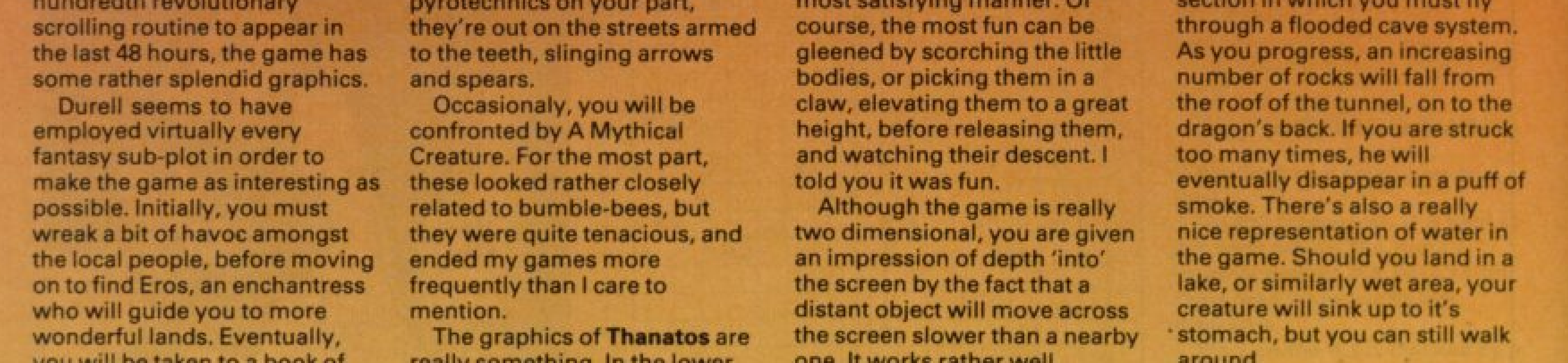
It seems impossible to turn

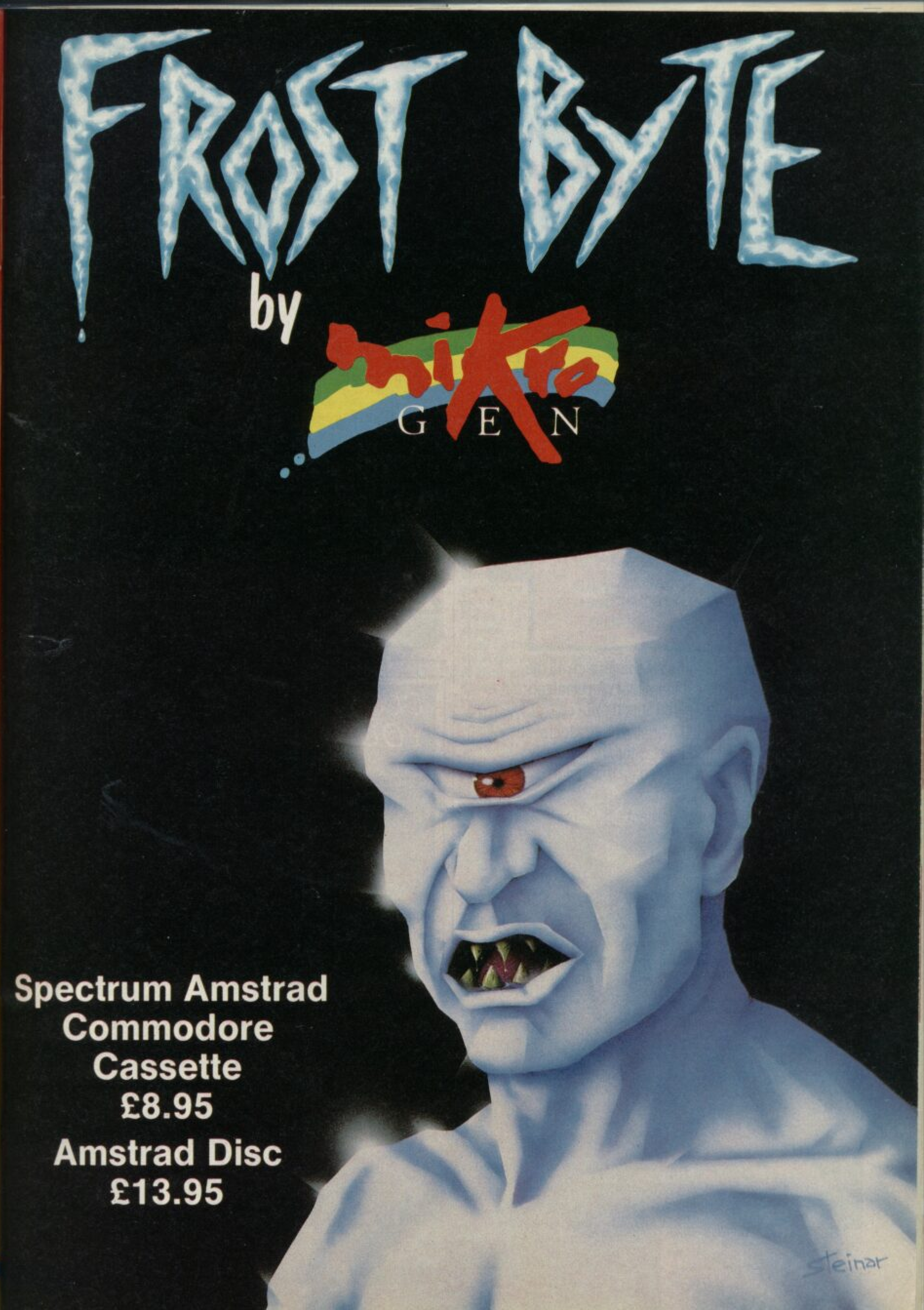


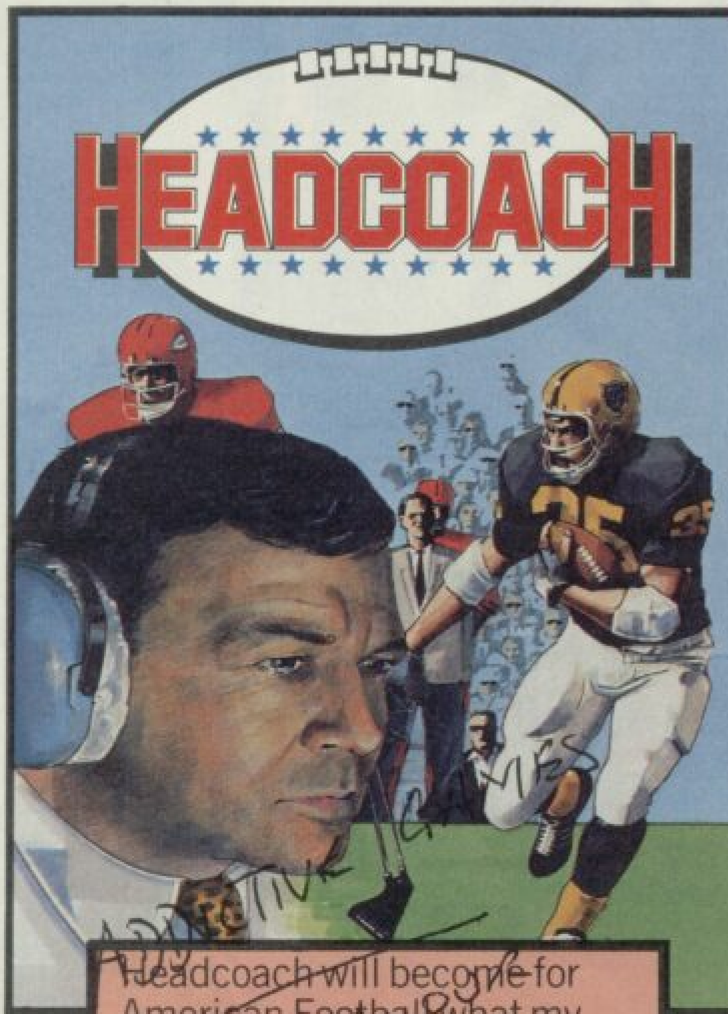
around once you have taken off in either direction, be it be air or on foot. It *is* possible to attain quite frightening speeds, but some realism is lost by the way in which you can slow down rather too easily.

There is one marvellous section in which you must fly through a flooded cave system. As you progress, an increasing number of rocks will fall from the roof of the tunnel, on to the dragon's back. If you are struck too many times, he will eventually disappear in a puff of smoke. There's also a really nice representation of water in the game. Should you land in a lake, or similarly wet area, your creature will sink up to it's stomach, but you can still walk around.

I enjoyed it all hugely ■




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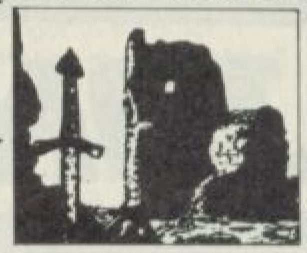
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Join us on November 22nd when Clive Barker, author of *Books of Blood* and director of *Hellraiser* will be discussing his works at the Forbidden Planet bookshop from 1pm to 2pm.





The BRITISH FANTASY Society

John Gilbert mixes with the fangs at Fantasycon XI

Is it a crime to enjoy watching monochrome zombies stomp out of the mist or listen to the erotic exploits of an alien sea-cow?

If it is then Birmingham's Midland Hotel played host to a bunch of criminal degenerates during the British Fantasy Society's annual convention. It's the big gig of the year for fantasy fans and the writers they worship, a festival of film, videos, blood and gore.

Norman Bates' head looked down from a poster advertising *Psycho III*: Norman's back to normal and mother's off her rocker. *Poltergiest II* was heavily plugged while questioning looks were directed at Domark's *Friday 13th* poster — computer games are at last making



▲ **Clive Barker launches his first horror novel this month. *The Damnation* game stars a gambler who sell's his soul to the devil. Very Faustian**



▲ **Ian Banks shot to fame with his first novel *The Wasp Factory***

headway into mainstream fantasy.

Fantasy licensing has become big business in the computer industry and many of the novels and films on view at the convention will be turned into computer game spin-offs by the end of next year. Already **Aliens** and **Labyrinth** have been snapped up by Electric Dreams and Activision. Next year you could be playing **Psycho III**, **Conan III** and **Poltergeist II**.

Novels are also falling to the new wave of license mania. It started late last year with **The Rats**, a gentle tale of massive man-eating rats written by that doyen of good taste James Herbert.

His recent book, **Moon**, may not be suitable for computerisation but plans are already afoot to make an adventure game out of **Domain**, the last in the trilogy of **Rats** books. A source close to Herbert tells me that he was not happy with the original **Rats** game, from Hodder and Stoughton, and programming teams such as Ramjam have been mentioned.

Shaun Hutson, with his books **Slugs** and **Erebus**, is a relative newcomer to the horror scene. The slugs apparently suck humans to death — perfect material for software houses, and Hutson is certainly keen.

Iain Banks, the rising star at Futura paperbacks also wants to get into computers. Banks is a mainstream writer who hit the big time with the critics in 1985 when his first novel, **The Wasp Factory**, was hailed as a work of genius. It's about a psychopathic boy who believes he's being commanded to kill by a wasps' nest. His recent novels, **Walking on Glass** and **The Bridge**, have been deeply conceptual — real high brow stuff — but he's working on a science fiction novel which he feels will translate to the small screen. His hardback publisher is Macmillan so Piranha could be in the running.

Clive Barker, recently described by critics as 'the new Stephen King' put in a late apperance at the convention to pick up one of this year's BFS Awards for one of his short stories.

He's a busy lad. His eight short story collections, collectively called Books of Blood, have just been reprinted, yet again. He's currently directing **Hellraiser**, a film adaptation of his short stories and a play which he wrote, called **The Secret Life of Cartoons**, started its run at the Aldwych in London during September.

The play, the film and his first novel, **The Damnation game** which is published in November by Sphere are all hot properties. The **Secret Life of Cartoons** is already being pursued by some software houses and interest has been shown in his other efforts **Hellraiser** and **The Damnation Game.**

It was a pity that Barker couldn't be at the convention's ever-wonderful Fantasy Raffle. One of the prizes was a first off the press set of the Books of Blood Vols 6-8.

The star prize, raffled off at roughly midnight, was the melted head of the lead vampire in *Lifeforce* — a film which got lost at the cinema but recently found its way on to video. Booby prizes included **Cobra** posters — sorry Ocean — signed by Sly, and copies of **Revenge of the Killer Tomatoes**, the computer game which almost made Global Software famous.

I found **Colour of Magic** author Terry Pratchett, in the bar, together with two representatives from his publisher Corgi, and Susannah Moore from Pirahna software. Pratchett is intrigued by computers.



▲ **These men are responsible for your worst nightmares!**

He used to own a Spectrum but now uses an Amstrad PCW 8256 to write his spoof fantasy books, the latest of which is **The Light Fantastic**, and plays Infocom's **HitchHikers Guide to the Galaxy.** He's had to borrow a Spectrum from Fergus McNeil at Delta 4 to play the game based on his bool. Will Pirahna turn Terry's **Light Fantastic** the follow up to **Colour of Magic** into a computer game. Susannah wasn't telling . . . ■

FANTASYCON 1986 AWARDS

The British Fantasy Society's Awards are presented annually at its convention in Birmingham during September. The four categories are voted for by BFS members and can include writers from anywhere in the world. This year the awards were presented by Dennis Etchision, who wrote the novelisations of John Carpenter's *The Fog* and *Halloween III*

Best Film. *Nightmare on Elm Street.* Other nominations included Woody Allen's *Purple Rose of Cairo* and *Mad Max — Beyond Thunderdome*

Best Fanzine *Fantasy Tales*, by Stephen Jones and Dave Sutton

Best Short Story. *The Forbidden* by Clive Barker, from Books of Blood Vol 6. Other nominations included Clive Barker's *The Last Illusion*, and *Flying to Byzantium* by American SF writer Lisa Tuttle

Best Novel. *The Ceremonies* by American author Ted Kline. Other nominations included *The Damnation Game*, from Clive Barker, and *Obsession*, the new paperback horror novel by Ramsey Campbell

JON RIGLAR's ZA CH



Wow! Freak out! Chewywoey and all that garb! An original game? No, surely not. I'm afraid it's true. In the latest aerodynamic parcel the Ed sent down, there was a game that got us all terribly excited. To soothe our nerves, we boiled the kettle. The game was so good we phoned him up but he was too busy designing his next parcel which he hoped would have a lower drag factor. Glider Rider **wins the 'scoop' award for this month and the infamous 'Spanish Eyes' award goes to** Action Reflex **for reasons that you can find out for yourself**

To kick off with one of the best things Virgin has ever done. Programmed by the same team which produced **Sorcery** it's

Dan Dare

Listen carefully, for I will only say this once. After testing this code thoroughly (That's a laugh, Ed) and making sure that it absolutely, positively, without-a-doubtly works, Jon 'Scoop' Riglar brings the infinite everything code for **Dan 'Fall unconscious for ten minutes' Dare**. It is brought to you by David Barstow from Manchester.

```
1 REM DAN DARE POKE:
  (FALL UNCONSCIOUS)
2 CLEAR 25000: FOR N=65310
  TO 65535: READ A
3 IF A<>999 THEN GOTO 5
4 POKE N, A: NEXT N
5 PRINT "START DAN DARE
  TAPE": RANDOMIZE USR
  65310: POKE 65326,0: POKE
  65114,99: RANDOMIZE USR
  65024
6 DATA 205,86,5,62,255,55,
  221,33,171
7 DATA 253,17,131,1,205,86,5,
  201
8 DATA 62,201,50,106,186:
  REM ENERGY DATA
9 DATA 62,24,17,26,182,18,62,
  93,19,18: REM STOP CLOCK
10 DATA 62,124,50,102,186,62,
  149,50,104,186: REM AMMO
11 DATA 195,88,152,999: REM
  END MARKER
```

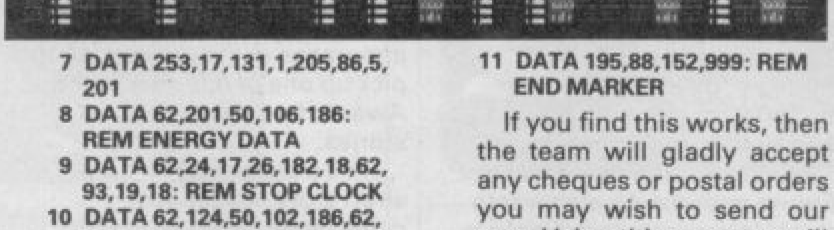


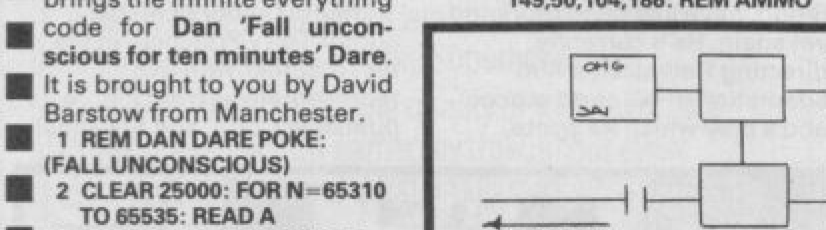
If you find this works, then the team will gladly accept any cheques or postal orders you may wish to send our way. Using this program will undoubtedly allow you to complete the game, but you must still be careful of a few things:

- If you get caught by a Treen when facing the wrong direction the computer sometimes goes into an endless loop you will need to *Load* the game in again. This is a drawback of using the code. To avoid this happening, simply make sure you shoot any Treens as soon as they appear in the screen
- If you drop from a great height, you will still fall unconscious for ten minutes and this ten minutes will also be deducted from your time
- If you keep falling and keep losing ten minutes each time, when your time goes to zero, your game will end
- When you are in Section 3, any Treen that runs into you will capture you and you will loose ten minutes.

So, think twice before using all the codes. If you want just infinite ammo and time, then take out Line 8 in the program. You can choose what you want to have by doing this. Clever eh? As a special treat for all budding Dan Dare's, the team, under the expert guidance of Mark *'Lady in Red'* Taylor took time out to map the first two levels of the game and to show you where the SDS keys are, and also the extra energy and ammo. Col 'Mekon rules' Leeds insisted that we tell you where all the over-head-guns were as well. Remember, you can jump up and shoot these and you can crush floor guns by falling on them. We can also complete Sections 2, 3 and 4 but we don't want to spoil your fun by showing you our maps.

A large black cloud with depression written on it has been floating ominously around the office for a month now — all because that Edgeley fellow has left. (Did you see that large word?). To cheer the team up, I took them to Boots so we could fiddle with their 128K+2s. Then on to Smith's we went to the magazine department to check their supply of SU (We opened the mag to Page 18 and stood beside my pic). It just so happened that someone recognised me and gave me this *Poke* for the very wonderful





Key to Dan Dare map. OHG — Overhead gun; Jail; FG — Floor gun; SDS — Key; A — Extra ammo; E — Extra energy

AP

AT

Jack the Nipper

(They didn't really, he's making it up, Ed).

```
5 RESTORE
10 LET W=1
15 LET TOT=0
20 FOR A=49998 TO 50070
25 READ B: LET TOT=
   TOT+B*W
30 LET W=W+1
35 POKE A,B
40 NEXT A
45 IF TOT <>319540 THEN
   PRINT "HE'S GOT IT
   WRONG AGAIN": BEEP
   I,I: STOP
```



```
50 PRINT AT 14,1; "GOOD
   GRIEF, IT WORKS. PLAY
   TAPE"
55 RANDOMIZE USR 49998
60 DATA 0,221,33,203,92
61 DATA 17,116,1,62,255
62 DATA 55,205,86,5,210
63 DATA 78,195,33,135,195
64 DATA 17,213,93,1,17
65 DATA 0,237,176,33,35
66 DATA 191,237,99,26,93
67 DATA 33,209,255,237,99
68 DATA 33,93,175,61,50
69 DATA 167,93,33,195,209
70 DATA 237,99,165,93,195
75 DATA 0,93,175,50,0
80 DATA 170,33,0,0,237
85 DATA 99,1,170,175,211
90 DATA 254,55,201
100 DATA 0
101 STOP
```

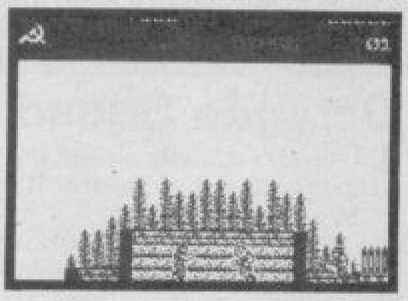
Have fun typing in the data. I think it ties in nicely with the map and tips printed yonks ago. Thanks are due to Julian Marshall. Moving on, and

Green Beret

seems to be causing more and more problems. My vow of not mentioning it again has had to go out of the window because of Lior Dekel. Lior writes to say that the program works better if you alter some of the data lines. So here goes nothing:

```
42 DATA 0,34,129,133,33
43 DATA 50,92,34,131,133
44 DATA 33,164,62,34,133
45 DATA 133,62,63,50,135
```

According to Lior, altering those lines also affects the game in other ways. You are automatically pushed on to the next level when you get



killed, you don't lose a life when moving from stage to stage and, when you accomplish your mission and go on to the next one, you get an extra life. All incredibly groovy.

Now here are some quick tips on playing

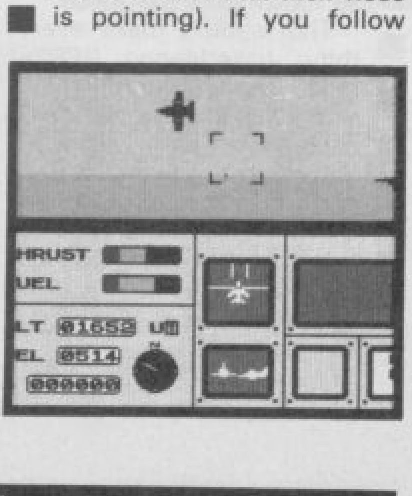
ACE,

Cascade's recent No 1 smash.

- At the start of the game it is best to select multi-role
- When you take off, climb to 20,500 ft to enable you to re-fuel quickly when necessary
- Now head out to the first of the enemy groups

Now use these tips to deal with types of enemy.

Air Combat: The planes always follow a set pattern. Never try to follow them as they are programmed to outrun you if you try. Instead, wait for them to appear on your screen. Their nose will be pointing either up, down, left or right. Position yourself and your sights in that direction in which they are heading. (They always fly in the direction that their nose is pointing). If you follow



these instructions, you should be able to blow them away as they pass through your sights

Ground Attack: This is fairly basic stuff. Descend upon your target and blow it apart using your cannon or air-to-ground cannon. It is best to climb back to 20,500ft after you've destroyed your targets

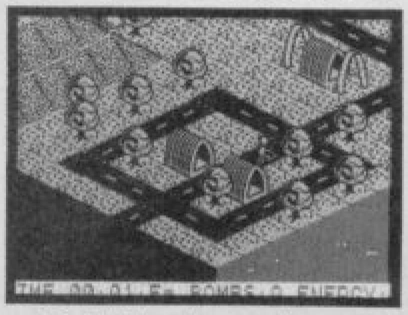
Re-Fuelling Stage: Climb to 20500ft and position the plane behind the re-fuelling carrier. The computer tells you where the plane is. Remember not to head towards it too fast or there'll be a pile up. Approach at around 203 mph. Thanks to K Wioms from Port Elizabeth.

Now for that Riglar 'award' winning and original game

GliderRider

It is extremely difficult to play and to begin with nobody in the office could get anywhere in it. However, 'scoop' himself has been up to his old tricks and has managed to destroy three reactors by sheer luck. (Pure skill really.) Here are some tips which are probably totally useless to you, but we thought they were very trendy.

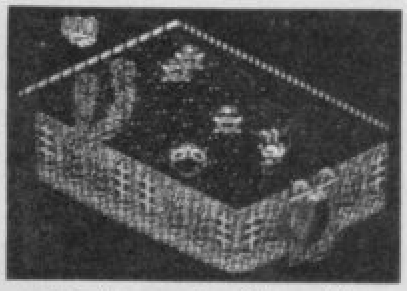
- It is difficult — almost impossible — to take off when you are on flat ground
- Check out where each reactor is when you're on your C5, . . . er, I mean bike
- Note where the laser defence systems are positioned. Most are nasty and are placed next to a reactor



- Think about where the lasers get their power supply from. There is always a pylon nearby a laser
- Before you try to knock out a reactor it's wise to bomb the pylon that powers the laser. If you successfully do this then the laser is rendered useless
- The game has secretly placed useless pylons around the place
- To work out which pylon powers which laser, simply ride your bike into it. If you have got the right pylon, then the laser will react and shoot out at the sky
- Every time you do this, the laser reacts for a set period of time. So, run into one and then quickly take off and bomb the reactor. This way, the laser is too preoccupied to fire at you, but you've got to be quick
- Remember, if you take off from a medium height hill, you will not be able to fly over a hill that is higher — you will just land on the side
- If you run out of bombs don't despair. Land and ride the bike over to what looks like a load of bowling balls all piled up like a pyramid. Do not, however, ride into the pile if there is a black cover over the top
- Although we have had problems finding one, we believe there *is* an object to give you extra energy

Batman?

I know it's a real old fogey but we still receive a lot of letters about it. Here's a nifty way to complete the game. It looks like a paragraph of total gibberish but you'll soon get the hang of it.



Here's a sort of key: UP — Go through the ceiling; DOWN — Go through the floor; up — top exit on screen; down — bottom exit on screen; left — left exit in screen; right — right exit in screen; BATBIT — Pick up Bat equipment; BATMOBILE — Pick up part of car.

So, let's go! Phew, ok ya! Right, right, down, BATBIT, down, down, BATBIT, left, left, left, left, left, up, left, up, BATBIT, down, down, down, down right, down, UP, BATBIT, down, left, down, down, right, right, right, right, BATMOBILE, up, left, up up, up, right, right, right, down, left, UP right, BATMOBILE, left DOWN, right, up, up, up, left, up, up, left, BATMOBILE, right, up, left, left, left, left, down, left, left, left, up, up, up, up, up, up, up, up, up, BATMOBILE, down, down, down, right, down, right, right, right, BATMOBILE, down, DOWN, DOWN, right, DOWN, right, up, left, up, left, UP, right, down, BATMOBILE, down DOWN, right, down DOWN, DOWN, down, down, left, left, down, down, BATMOBILE, up, up, right, right, UP, UP, UP, down, UP, UP, right, right, down, right, down, down, left, left, left, left, left, up, up, left, left, up, up, left, left, down, down, left, UP, UP, down, down, UP, left, left, jump on to Batmobile and you've completed the game.

JON RIGLAR'S

ZAP CHAT

There it is, the complete solution, so we would appreciate not receiving any more letters concerning the game. Well, that just about wraps up my part of the column, so I'm off to make a cup of coffee. Over to you, Norm.

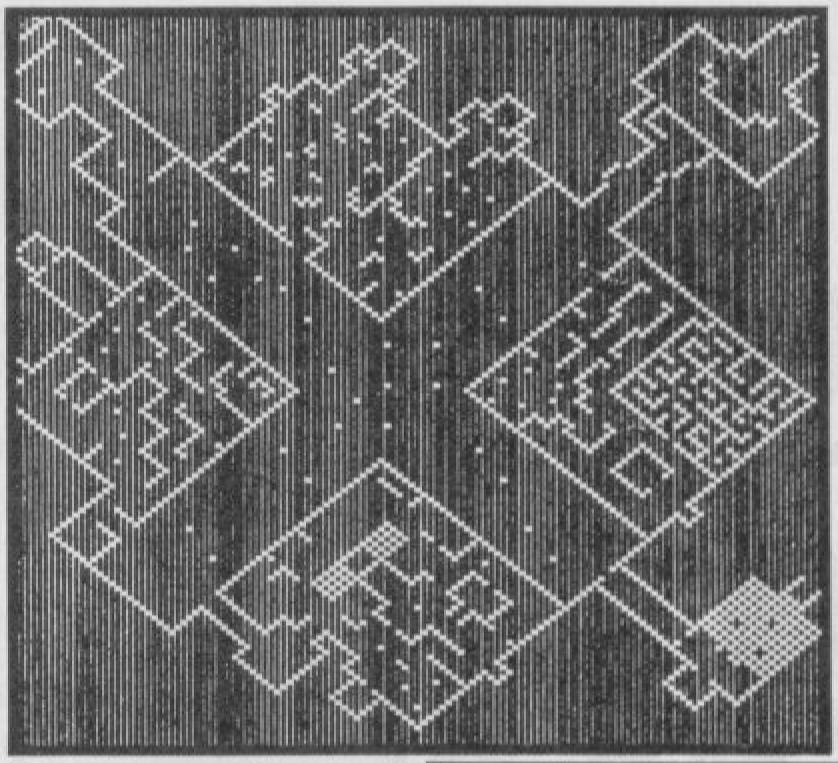
Greetings fellow hackers and lesser mortals. As you have probably noticed, Jon has pushed the rest of us forward to the start of the column so he can go off and pretend to test out some *Pokes*. We realise that there are *Still* a few people out there who don't understand how to use those magical cheat codes, and so to clear it up once and for all, Jon has let us use this part of the page to clarify a few things. As none of us knew how to spell the word 'header', we had to phone up EMAP Central Control who kindly looked it up for us (?)

Lately, most cheat codes printed in this column have come in the form of a complete program which, provided you've set everything up correctly, you're in business. If, however, you wanted to type in a *Poke* found in the *Poke Corner,* you have to alter the program header itself.

Here's how: Nearly all machine-code programs have a Basic header, which if you *Merge,* you will be able to fiddle with. If you cannot see the listing, simply change the *Ink* colour. Check the manual if you are not sure how to do this. Now you must *Edit* the line which contains the last *Print Usr* or *Randomize Usr* statement. this is the statement which tells the computer to run the game automatically when loaded. Now place your poke statement before the *Randomize Usr* statement, making sure you place a: on either side of the *Poke*. If you wish, you can insert a completely new line to contain your *Pokes*, but remember to insert it before the last statement. That's it. Easy peasy or what? Very quickly, remember that cheat codes printed in the form of a program need not have a *Load ""* statement. Also, if you have an error, check all data items — they cannot be above 255 or below 0. If you are really adventurous, you could check the Checksum — this should be as stated in the program.

The following people wrote incredibly interesting letters but unfortunately we haven't enough room to print them all: Richard Ambridge, G Brown, David Poulson, Isidoro Zoroza, Dave Banks, Steven Bailey, Steven Rennocks, Flooks and Jon Rogers.

Here's a nifty map from David Poulson for Mastertronic's



Octagon Squad

I haven't actually played the game, but I've heard it's quite good. Let's go:

Also from David Poulson comes this *Poke* and tips for Mastertronic's

Lap of the Gods.

He says: collect the effigies in the first two mazes (Darwain and Primeous) to get yellow slab acid, blue rock digger and hover power. With these it should be possible to go around the other mazes and just keep digging until you find the crystals. I think the idea is to collect the crystals in order, ie, Primeous then Secondus.

When you've finished the game, the playing window turns black and white and scrolls upwards, You are then asked for your name for the high score table but the name gets changed to 'Cheat'. Next game there is a cheat mode built in, which is accessible by just pressing *Fire*.

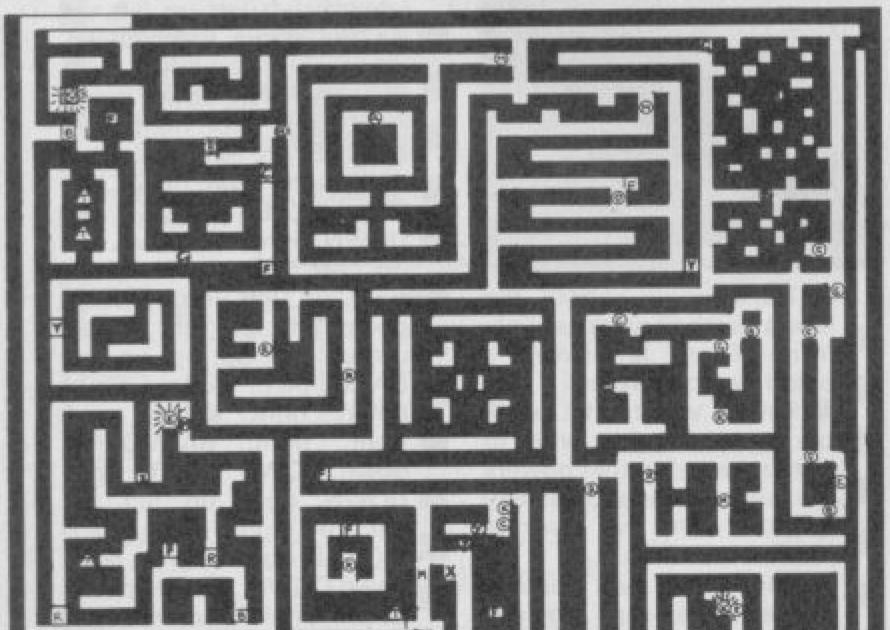
Here is the *Poke* which stops the constant energy countdown, but does not stop anything else, ie, no infinite lives or shields:

```
10 CLEAR 28999
11 LOAD "" CODE:POKE
   47039,201
15 RANDOMIZE USR 47000
20 POKE 53790,201
30 RANDOMIZE USR 57680
```

That should make everything ticketteeboo (Hacker talk). There's nothing else worthwile in the mailbag except some really fabby fan letters and several bribes tryng to get us to give away who the Editor is in the *Spot the Editor* competition. Look out for a serious compo in this very place next month.

We've also got hold of a map for

Prodigy.



T: Table F: Fountain X: Door K: key ■: Teleport Fence in Central Cross

It's more or less self-explanatory, as far as it goes. It didn't mean much to me, but if you're stuck it looks like it could be a big help.

Let's finish off this month's column with a letter. It comes from Martin Beney from West Sussex, who writes:

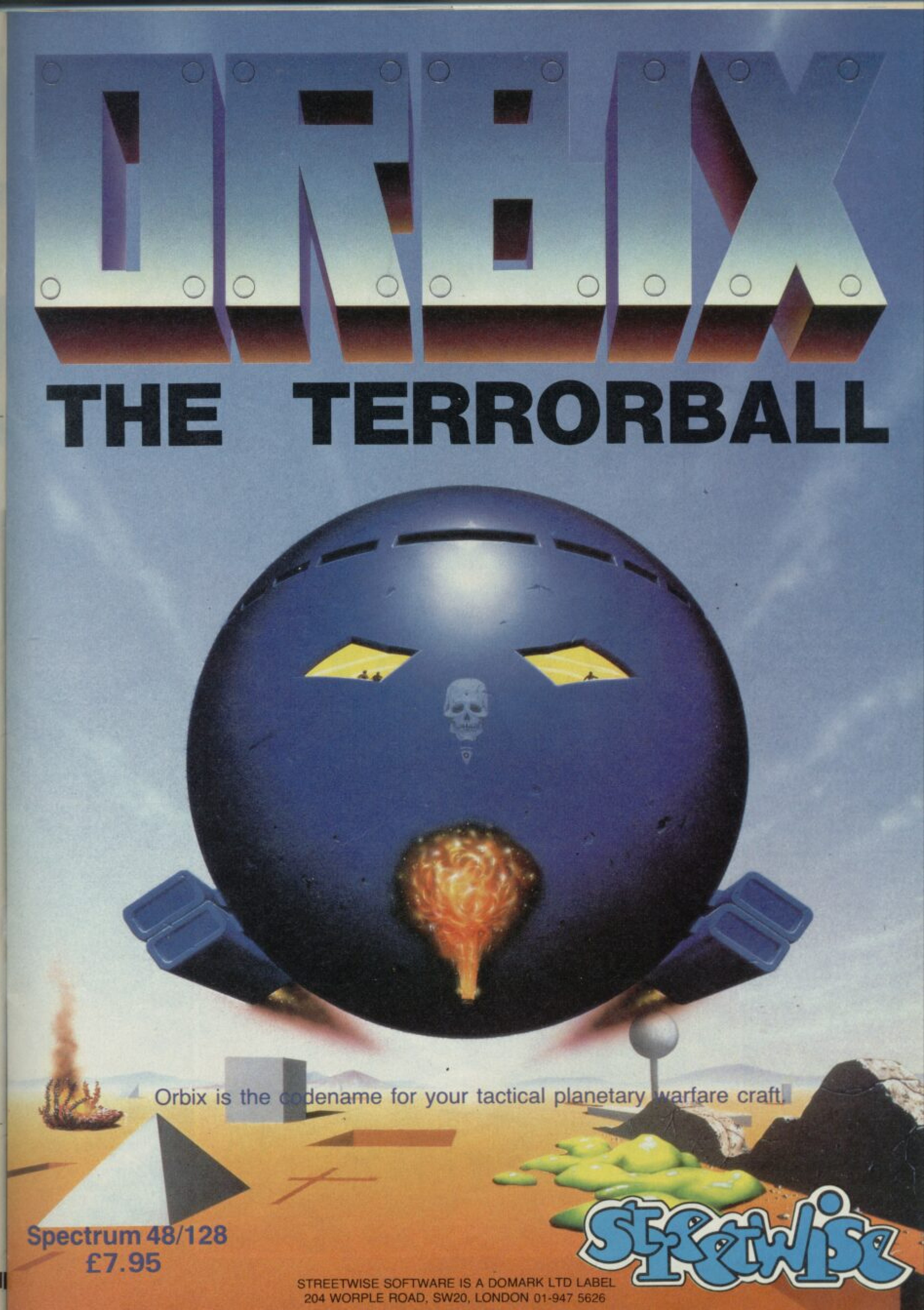
"I have written to you before but for some reason unknown to me you did not put it in your *Zapchat* column.

"If you put this letter in your spot, I shall eat my boots. I have really written to you to tell you that I have a new high score in **Bombjack**. It is 885990 and took me half an hour. I have also included some *Pokes* just in case you should wish to include them in the *Poke* Corner."

Well, I'm afraid we didn't want any of your *Pokes*, so there. But you've got to eat those boots now. To help you, we're going to send you some of Graham's home made ketchup. Lucky you. (Lucky — are you sure?). We are not, however, going to send you the all exclusive *Zapchat* T-Shirt because we are very stingy. And we want you to send in a picture of you eating them shoes. If you don't we'll know you didn't do it!

That about wraps it up for this month. Just a quick word to tell you we've got some incredible treats in the Crimble special. Watch out for some great tips! ■

Whatever you want to say, say it to: Jon Riglar, *Zapchat, Sinclair User*, 30-32 Farringdon Lane, London EC1R 3AU.


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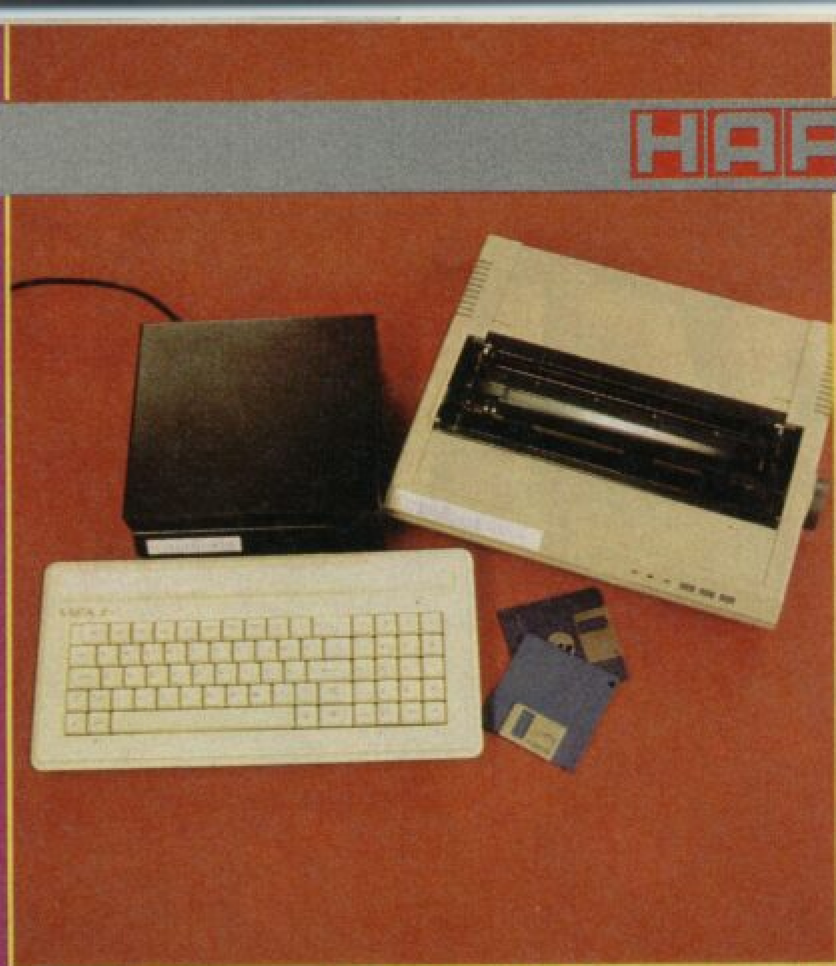
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Is Saga's 'ultimate' add-on worth it?

The Saga Systems' Compliment purports to be a complete system. The 'ultimate' add-on that will turn your mere mortal of a Spectrum into a personal computer worthy of the title 'PC', equipped with a disc drive, quality keyboard, printer and integrated software suite.

It costs £299.99 plus VAT, which for those of us without an accountant works out at £344.95, and you certainly get a lot for your money. Some of the components of the system — like its badge engineered Opus drive — are already highly respected pieces of hardware.

Saga's strategy is that the total price of the package will be good value for money, saving around 15 per cent on the combined cost of the parts if bought separately — and any interfacing problems encountered with a piecemeal system will be avoided completely.

So the real question is: How well has Saga chosen the components of the system?

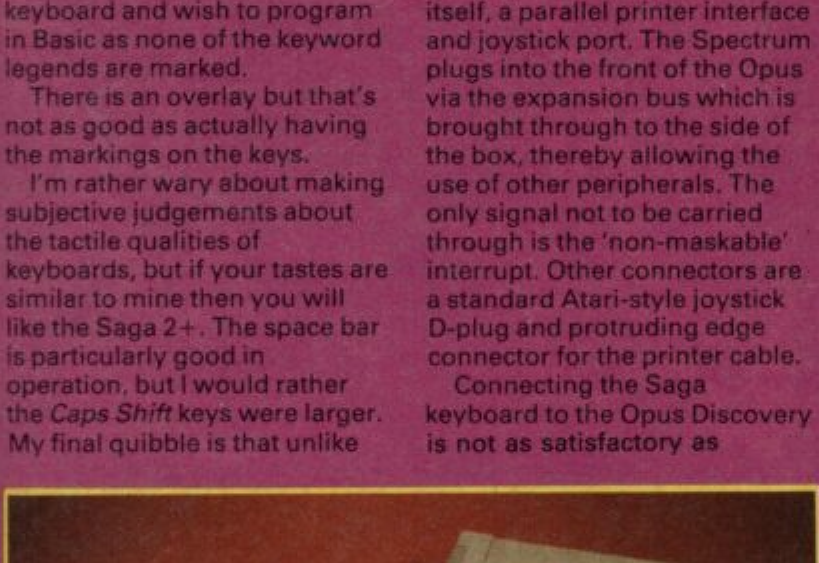
The keyboard is the Saga 2+, a considerable improvement over any of the standard keyboards. Some six inches wider than a Spectrum, you simply remove the top half of your computer and bolt it to the underside of the Saga. Many additional keys are provided — a numeric keypad, *Extended Mode, Caps Lock*. One problem occurs if you are unfamiliar with the standard Spectrum keyboard and wish to program in Basic as none of the keyword legends are marked.

There is an overlay but that's not as good as actually having the markings on the keys.

I'm rather wary about making subjective judgements about the tactile qualities of keyboards, but if your tastes are similar to mine then you will like the Saga 2+. The space bar is particularly good in operation, but I would rather the *Caps Shift* keys were larger. My final quibble is that unlike the majority of machines the *Delete* key is on the left. The keyboard normally retails at £59.95.

Disc drive and interfaces are provided in the shape of re-badged Opus Discovery One. This a fairly chunky unit housed in a black metal case. In addition to the 3 ½ inch disc drive and controller, it also contains a power supply that feeds the Spectrum as well as itself, a parallel printer interface and joystick port. The Spectrum plugs into the front of the Opus via the expansion bus which is brought through to the side of the box, thereby allowing the use of other peripherals. The only signal not to be carried through is the 'non-maskable' interrupt. Other connectors are a standard Atari-style joystick D-plug and protruding edge connector for the printer cable.

Connecting the Saga keyboard to the Opus Discovery is not as satisfactory as connecting a normal Spectrum because the Saga overhangs the supporting plate considerably. Saga will be providing bolts and hopefully some large rubber feet to cure this problem, but even the review system showed no signs of coming apart — it was just rather wobbly.



For those not familiar with the Discovery One, a brief description is in order. To all intents it behaves very much as an Interface One and Microdrive, but with vastly improved *Load* and *Save* speeds and, in my experience, flawless reliability. I am a fan of the 3 ½ disc medium, although the Opus version is only capable of storing 178K on a formatted disc. The disc-operating commands are reasonably easy to use, but are restricted somewhat by having to maintain compatibility with Microdrives; the advantage of this, though, is that you will have no trouble converting software to run on disc.

The remaining piece of hardware is a dot-matrix printer, dubbed by Saga as the Compliment LQ, but its original name of Polo lurks underneath a rather temporary looking label. The printer is actually a simplified version of a Triton RQ80, but not many people in the UK will have seen one of those either (so I don't know why I mentioned it!) The Polo is fairly compact with draft, normal and NLQ printing available at a claimed 150, 120 and 25 characters per second, respectively. The LQ is no slouch. It also boosts a good range of print and graphic modes as well as international character sets. Control codes are in abundance and on the whole seem to be Epson compatible. I was particularly impressed with the look of the Near-Letter Quality mode, which is available in both Pica and Elite sizes (30mm wide, 290mm deep and 90mm high.) The usual front panel switches, *Select (On Line), Form Feed* and *Line Feed* are provided. To operate the DIP switches that dictate the default print settings necessitates, unfortunately, dismantling the case — although they can be controlled by software. Paper feed can be either tractor-fed fanfold or friction-fed single sheet. Once threaded up the tractor feed works well, but using single sheets is a bit of a pain.

Further evidence of the basic nature of the LQ emerges when you try to fit a ribbon, because the front cover can only be removed by prising the case apart. The ribbon cartridge is easy enough to fit but does not look as if it holds much fabric so running costs may be high, particularly if Saga turns out to be the only importer — they have not set a price for a ribbon but quote £7 to £9.

The complete hardware of the Compliment package fits together well and offers excellent value. Apart from the lack of punctuation symbols on the keyboard and my slight doubts about the printer's suitability for a heavy workload, the package has the potential to be very useful. If you want an aesthetic criticism, the cream keyboard, black disc box and grey printer are not worthy of the name Compliment from a colour co-ordination point of view, so if you are an interior designer or of a very sensitive disposition, beware!

The real icing on the cake of the Compliment system, though, should be the software packages included.

There are three main items included: **The Last Word** is perhaps the most important as the foremost use of the Compliment is likely to be word processing, but you are also supplied with Campbell's **Masterfile** database and Omnisphere's **Omnicalc** spreadsheet. All the software resides on a single disc and is linked by a menu program that is automatically loaded by pressing the *Run* and *Enter* keys.

The Last Word was awarded an *SU* Classic, and in relation to the Spectrum competition this was quite justified. For myself, I would surmmarise the program as very powerful, very fast, with P55 ▶



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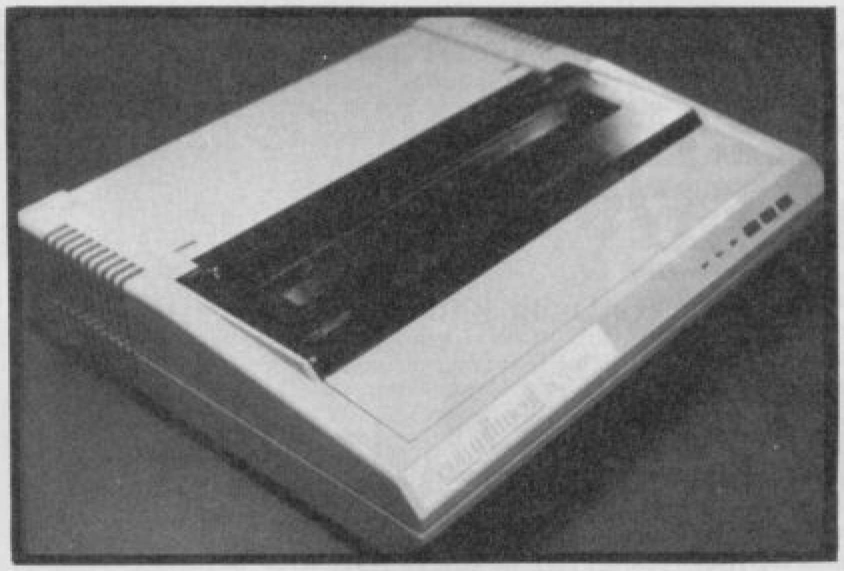
some curious omissions and some uniquely excellent features. Above all, its power makes it difficult to get to grips with, but worth the time spent mastering it. The paging of printed documents is a complex procedure, however, and the *Help* page is so cryptic that is probably quicker to consult the manual. I must admit to using various versions of **Tasword** for so long now that I am unlikely to change to any WP that doesn't turn a Spectrum into a Mac Plus running **Microsoft Word.**

Masterfile has been around as long as the aforementioned **Tasword** and offers a very flexible approach to creating a database. You can design the style of screen display and reports, and the whole program is menu-driven to the extent that you hardly need the manual to get started. **Omnicalc** is another highly respected utility program. Not such a cinch to get to know, but powerful. Not so many years ago you would have needed to buy an Apple II to benefit from such programs.

The remaining programs available include a screen dump that is used by both **Masterfile** and **Omnicalc** for output to the printer and a number of routines for extending and modifing **The Last Word.**

Really to make the grade as a package, the integration of these programs, along with various commands for disc handling and so on, into one menu-driven program is essential. The Compliment is nearly there, and by the time it is launched I hope that Saga have solved some of the problems that mar the menu program. As it stands, however, I found myself having to pull the plug on a number of occasions, and a computer-naive user is likely to often find themselves lost in the wonderful world of Sinclair Basic.

Of the crashes that occurred, the most fatal was when returning to the menu from the spreadsheet, but two other points irritated me. The first should be sorted out before the launch — **The Last Word** was not properly configured for the Compliment printer. For example, it does not print a £ sign and selecting the draft mode results in no output at all. The second problem is less likely to be solved quickly and revolves around the use of the Opus Discovery. If you do something daft such as trying to save a file to a non-existent Drive 2 or sending data to an unattached printer, Basic does not have sufficient error trapping to allow a dignified exit.



Even with a cleaner version of the menu program, it would be stretching a point to claim that the Compliment was as suitable for beginners as a real windows/icons/mouse/printer (WIMP) environment, but it should be adequate for anyone with a little understanding and enough confidence to cope with a non-fatal crash.

I dislike writing reviews that come to no firm conclusions. It would be so satisfying to write something along the lines of 'Buy one, or if you can't, steal one' or an equally positive sentence such as 'if it was a house it would be condemned'. With a package like the Saga Compliment, consisting of a number of components of varied quality, the reservations are bound to make any review sound a bit indecisive.

It's a bit of a mixed bag. Good in parts and certainly not bad value for money ■

Jeff Naylor

the write stuff...

OK who are these people? Well, to kick this section off we thought we'd take a typical cross section of everyday readers who just happened to be working in our offices at the time and ask them what they thought about a totally random selection of games found under desks, in filing cabinets and behind that funny black thing we got in for review in 1984 and can no longer remember what it is. None of them has any previous interest in computer games, most of them still don't. We stuck them in front of a TV with a joystick anyway...

Splitting Images
Domark

I suppose it's a reflection of how lousy I am at playing computer games, but when it came to Domark's Splitting Images I couldn't even finish off poor ol' Ronnie's fisog (that is ad-speak for face).

The game was frustrating to say the least, and resulted in a grave gnashing of my molars. I can't say I enjoyed playing the game but I must say the graphics were clear and in the case of the cursor, colourful. One question though — why did the cursor have to sound like a low flying helicopter. A more soothing sound might have kept me saner, longer.

The idea was novel. I found, though, that there were too many things to be dealt with at once ie opening doors, flags to be merged (something I still haven't done successfully), bombs to be ejected, taps to be .... what are you supposed to do with the taps?

I could probably have coped with the very basic putting-things-in-the-right-place-before-the-time-ran-out type of game. But this was all too much.

I'd have rather been playing a straight-forward, no-nonsense blast game (but somehow I drew the short straw) ■

Louise



Lightforce
Faster Than Light



Well, I drew the one everyone wanted to review — well Louise and Gareth, anyway — Lightforce.

And, not wishing to be controversial or anything, I'm not all that struck by it.

Even as we speak people are telling me I'm a wally and that Lightforce is incredibly wonderful, but I'm disagreeing furiously.

The problem for me was that, sure, it looks fabulous. No question. But I got bored with the play quite quickly. For a start it isn't fast enough. The scrolling seems slow and the aliens move in quite predictable patterns.

As a no-messing blast I'd prefer Uridium anyday ■

David

Very Big Cave Adventure
CRL/St Brides

CRL's Very Big Cave Adventure (VBCA) is the computer game equivalent of Monty Python's Life of Brian.

While Python parodied the New Testament, VBCA is a spoof of the game most die-hard adventurers cut their teeth on, Colossal Caves.

I first tussled with Colossal Caves seven years ago on a large mainframe computer and spent the best part of two hours trying to catch squirrels which the computer referred to and then denied all knowledge of.

It says much for VBCA



that it brought back all the frustration and resentment I experienced then but with the sort of humourous observations and surprises which made me rush about trying to find someone to share the experience with.

What's more it's genuinely funny. More recent converts to gaming will find the graphics are er... well... there.

The puzzles and problems are still tough enough to be mostly beyond me and I found it kind of reassuring to discover that I'm still the kind of adventurer who litters the screen with expletives and tries to thump everything in sight to try and provoke some sort of response ■

Terry

Uridium
Hewson

ZAP! ZAP! ZAP! CraaaSSH! Bloody Hell!!! Sweaty hands, cross-eyes and shaking hips — it's a good thing I'm not the Last starfighter or else we'd all be up ****creek!

This Uridium is well wicked. A real zap-me-up-before-you-go-go wham-bam, thank you alpha centauri.

This is THE BIZ!! Zap or die. Waste the aliens and never stop.

Phew! That's better. I'm glad I've got that out of my system It's not easy being a Mad Celt.

Uridium is just my kind of game — I used to blow pounds and pounds on holiday in the arcades. Uridium is mega-brill. Lots of nasty aliens. Two colours? What's wrong with bright yellow explosions and green alien blood? It's a small criticism. It scrolls (technical, huh!!) very smoothly and I'm not going to give you lot any tips because I have the highest score of anybody in the office.

And did I ever tell you I want to be a star trooper, not a designer, but that's another story...

Uridium is the kind of game heart attacks are made of ... aaarrrgggh!!! ■

Gareth (The Mad Celt)



Knight Rider
Ocean

Before I say anything, I've got to make clear — this is the first computer game I've ever tried. That's my excuse, anyhow.

What I've seen of the ones you get in pubs are a lot better than this but maybe that's unfair.

I just didn't get the real pont of it, to be honest. You drive a car — K.I.T.T., which talks to you about the place. Actually driving was boring because it was too easy. It's difficult to crash, and it just seems to go on and on, without very much happening. Apart from the tiny helicopters there's nothing to do along the road and the blue and yellow colour combination on-screen was quite nauseating.

The map of America was good and it got a bit more interesting when I got to a city and went into the armoury. At last there was something to do: avoid the blobs in the plan-view maze. I could quite get into that, but just when it was getting exciting I 'failed in my mission' and had to go through all the boring driving again.

It's a miss, for me anyway ■

Linda



Every so often — well very often actually — you write to tell us that we know nothing about anything and insist that some program we trashed is actually the best game ever. Conversely you blast us for saying something is great that you absolutely loath and detest.

Enough is enough. We can't take any more, if you think you're so clever you write the damn magazine. We mean it!

Every month we'll devote a page to a selection of your opinons on the latest software. Don't get mad, write the review you think the game should have received and we (subject only to space) will print it.

Now, aside from seeing your work in print we will send you a crisp £10—er, cheque — with which to buy the software title of your choice — tell us what you plan to spend the money on if your review is printed.

One request, we want to know what you look like so send us a picture. Any old picture will do — you at home, in Ibiza, in the garden, even making silly faces in photobooths we don't care.

So get cracking — write your reviews and send them together with the completed coupon below.

YOUR REVIEWS
Maximum 150 words. No swearing, libel or illegibility and come out of the corner fithing. Don't beat around the bush — tell us straight what you think. Send your review (or any *recent* game) plus your picture and fill in the coupon. *send the lot to The Write Stuff, Sinclair User, 30-32 Farringdon Lane, London EC1R 3AU.

Name..

Address..

....

The program I would most like to buy with my tenner is ....

* Reviews supplied without full name and address will not be considered for publication.

the write stuff...

TT Racer
Digital Integration

Brilliant! I thought as opened up the packaging to TT Racer. While I'm waiting for the game to load I'll nip outside and set fire to the latest copy of *Crash* with the cute little magnifying glass Digital Integration has thoughtfully provided.

Little did I know the thing was a Lenslok. Three hours later I'd finally got the thing to load.

Once running, the game details are excellent. You can race on any track in the world, even though they've all got the same starting gate, and work your way up from club class to Grand Prix. You'll need fifteen pairs of eyes to read the instrument panel, though.

The booklet says 'failure to negotiate a corner may result in crashing'. In my case me and Terry the Tarmac had several tangos resulting in a sixteenth out of sixteenth placing in my first five outings.

I got better. Rev the bike like hell at the starting gate and drop the clutch every time you see the rev-counter go into the yellow. By the first corner you'll be up with the leaders doing about 150mph. This is where the problems start! To corner I tended to yank the joystick like a maniac and jam down hard on the brakes. Usually this resulted in a major encounter with the concrete grandstand.

I found I was over compensating on the joystick — every time I got through a curve I'd come out at a 45 degree lean. Eventually I discovered the knack — relax and follow the ebb and flow of the road with gentle manipulations of the joystick and you'll beging to make progress.



Sure enough, on my nineteenth attempt I swept past the field to record my highest position — fifteenth! The unfortunate rider to suffer this humiliating defeat was Franco Uncini, highly strung Italian and ex-world champion. Needless to say, he's since retired to the gentler sport of gondola racing.

TT Racer is great. It always left me with those little knots of tense muscle at the top of my shoulder as I determined to win — that's a good sign ■

Marcus

TRIVIAL PURSUIT
DOMARK

Trivial Pursuit, the computer game costs less than *Trivial Pursuit* the board game and mostly when board games are converted the computer version isn't as good. Odd but in some ways the opposite is true here.

The game recreates the *TP* board but squashes it into a rectangle. It's a little confusing at first but you get used to it. It is useful that the computer keeps track of the boring things like score and automatically sorts out what squares you can move to leaving you to get on with the business of answering (and fighting about) the questions.



Many of the original *TP* questions are in the game although many new ones using things like sound and graphics are added. The question asking section could have been boring but isn't: a little character called TP wanders into a booklined room and the question appears.

You have to be honest about your answer — the computer doesn't check it but just asks you to say whether you are right or wrong — I'm afraid I cheated a couple of times when I was almost right! ■

Alison

COMPILATIONS

SOFT WARE

REVIEW

BEST OF BEYOND

Beyond used to be known for quality software, but in recent times, it has rather let things go. **Superman** was the start of the slippery slide, then some internal changes, and a takeover by BT resulted in the company maintaining a very low profile.

This Christmas — with the release (maybe, maybe) of the much publicised **Star Trek**, which has had some very favourable murmourings — sees the start of the Great Beyond Fightback. A sort of Beyond-come-back-from-the-beyond scenario.

In the meantime, it has released a compilation tape of four games from its more illustrious past, and until Captain Kirk bursts upon our screens, that will have to do for now.

Of the four, **Sorderons Shadow** is certainly the weakest and I, personally, dislike it intensely. It is a graphic adventure that has a split screen. One for the graphics and one for a 'text' window from whence you give and receive information. The game objective is to kill Sorderon but you can only do this if you have the scroll of Dorian, which you can only get if you complete the nine tasks of the unnamed one, who shall remain nameless (or is that one of the nine tasks?) The game wasn't a success and I thought it lacked atmosphere.

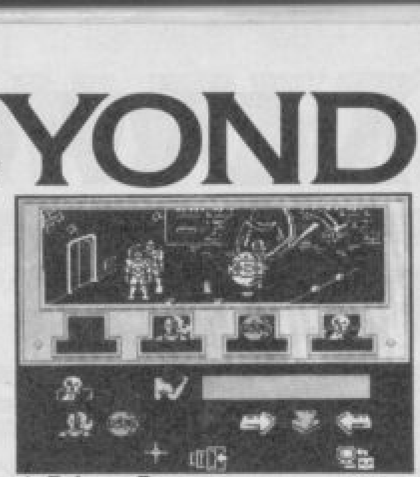
Shadowfire and **Enigma Force**, which pioneered the use of icons in adventures are both great fun to play and are based around the Enigma team, who are a band of mercenaries who each possess different special abilities that need to be used in order to win the games.

Shadowfire — which was the original release chronicles the rescue of Ambassador Kryxix from within the spaceship of General Zoff. Capture the evil General and destroy the ship within one hour and forty game minutes. By the use of icons, which control the whole game, you have to deploy the Enigma team around the ship using weapons, picking locks and generally using your strategic prowess in the most effective way.

Enigma Force was an interesting sequel. Once again icons are used to drive the game, but this time the action unfolds on screen and you see the team members actually going about their work — something missing in **Shadowfire**. The story continues from the original. Your ship whilst carrying the Ambassador back, has come under fire from Zoff's forces. You crash-land on a strange planet and find that in the ensuing mayhem, the Ambassador has disappeared. Your mission is to locate his whereabouts (again!;.

Last, and by no means least, comes the marvellous **Doomdark's Revenge**, Mike Singleton's awesome sequal to **Lords of Midnight.** The gameplay is practically similar to **LOM** with the exceptions that this time you can enter some of the buildings you come across, and the locations have been increased to six thousand with forty-eight thousand different panoramic views! Very dramatic, very big and very good.

If you always fancied getting these games but could never raise enough dosh — now's your chance. I strongly recommend this compilation ■



▲ Enigma Force

FACTS BOX

Four-in-one from Beyond. Three are first class, brilliant and so on. Strongly recommended batch from the hayday of the label

BEST OF BEYOND
Label: Beyond
Author: various
Price: £9.95
Memory: 48K

Reviewer: Andy Moss

★★★★★

BIG4

An excellent pack with all the games included being at least reasonable and some actually extremely good.

Titles are **Combat Lynx, Critical Mass, Turbo Exprit** and **Saboteur.**

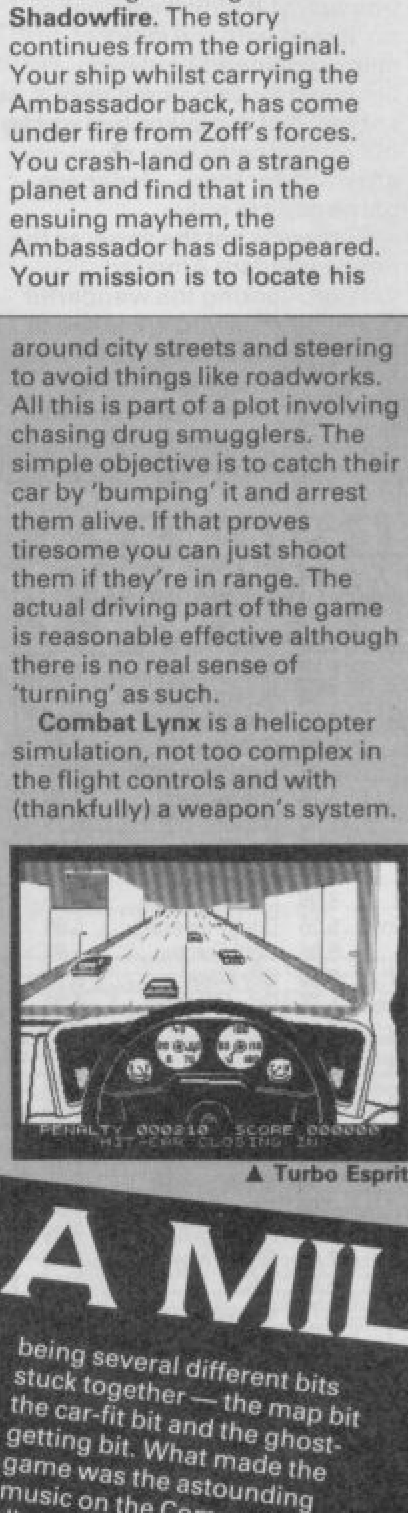
Saboteur is a sort of cross between **Exploding Fist** and **Impossible Mission.** It has simplified ninja moves: jump. duck, kick, punch, but aside from beating people up there is a fairly complex plot involving blowing up enemy bases and collecting secret information. Not graphically astounding but fair.

Turbo Espirit is a nifty car game, with the basic idea of driving as fast as possible around city streets and steering to avoid things like roadworks. All this is part of a plot involving chasing drug smugglers. The simple objective is to catch their car by 'bumping' it and arrest them alive. If that proves tiresome you can just shoot them if they're in range. The actual driving part of the game is reasonable effective although there is no real sense of 'turning' as such.

Combat Lynx is a helicopter simulation, not too complex in the flight controls and with (thankfully) a weapon's system.

This means destruction. There are missions and bases to land at and messages but the fact that there are six different weapons systems should be all the information you need. A good choice for people not quite up to the sophistication of

▶ 6



▲ Turbo Esprit

FACTS BOX

Quality compilation with all the games well worth another look. Four titles only but good value nonetheless

BIG 4
Label: Durell
Author: various
Price: £9.95
Memory: 48K/128K
Joysticks: various

Reviewer: Graham Taylor

★★★★☆

THEY SOLD A MILLION 3

FACTS BOX

Fighter Pilot makes this one a winner. As well as that you get some fair bonus titles.

THEY SOLD A MILLION 3
Label: Ocean
Author: various
Price: £9.95
Memory: 48K/128K
Joysticks: various

Reviewer: Graham Taylor

★★★★☆

The latest compilation from Ocean is a possible gem in that it contains at least one classic program — Digital's Integration's **Fighter Pilot.**

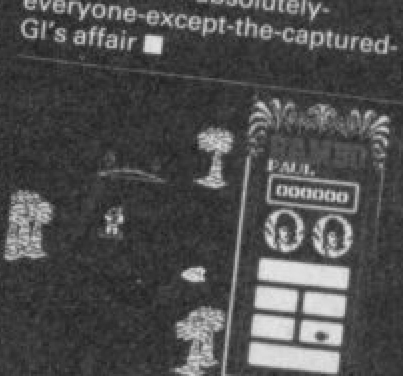
It's certainly the best flight simulation available for the Spectrum. Not only does it have all the detail and handling accuracy you'd expect but you can take part in very realistic air battles and blow things to bits. A must for your collection.

You get three other titles on this tape: **Ghostbusters, Kung Fu Master** and **Rambo.**

Ghostbusters was never much of a game (he asserts boldly) being several different bits stuck together — the map bit the car-fit bit and the ghost-getting bit. What made the game was the astounding music on the Commodore — distinctly lacking on the Spectrum (except 128). Sprites are grotty — attribute problems abound.

Kung Fu Master is a fairly recent release and basically you wander across several screens kicking your way through to the usual princess in the last screen. Take in chucked objects, dragons and numerous guards and that's the game. The graphics are nasty and whole game feels sluggish.

Rambo is **Commando** — a plan-view kill-absolutely-everyone-except-the-captured-GI's affair ■



COMPILATIONS

SOFT WARE REVIEW

NOW GAMES 3

Now Games 3 is the latest compilation from Virgin, with a pretty fair quality level if no real winners.

Titles included are **Nick Faldo Plays the Open, Sorcery, Codename Mat II, Everyone's a Wally** and **a View to a Kill.**

A View to a Kill was, it was generally agreed awful, an astoundingly bad three-part exercise in flickery sprites and dull plots featuring a James Bond who appears to move like a ballroom dancer. Well worth totally avoiding.

Codename Mat II was inferior to the original game, and came over as a poor man's **Elite** with sprite graphics and simpler gameplay. It looks reasonable on screen with the effect of ships moving towards you achieved by using up-dated sprites. Not actually a bad game but not going to keep your attention for long — for space game addicts only.

Sorcery is not the same as the near legendary Amstrad version. Lacking the wonderful graphics what you are left with is a reasonable broomstick bash 'em up in which you zoom around finding keys to locked doors and being killed plenty. The version of **Sorcery** on the compilation is a beefed up one which has never seen the light of day before with souped up grpahics and more locations. It's the equivalent of those infuriating compilation albums where there is one unreleased track by your favourite group.

Everyone's a Wally is well, a Wally game, which means it has enormous sprites and massive attribute clashes. The entire



Wally family is here and you shunt them around solving problems and collecting objects. Deeply irritating or a lot of fun depending on your perspective.

Nick Faldo Plays the Open is perhaps my favourite program here but then I have this strange weakness for golf programs. This is one of the best with strong graphics and a lot of inventive touches. Particularly noteworthy is your know-it-all caddie who comments sagely on your choices of club and generally criticises your performance. My only complaint is the game is so designed that at the last stages of the hole, when it's down to short puts, finishing becomes something very close to a matter of luck or the resolution of your TV.

Not a mega value compilation but certainly a couple of titles there worth catching ■

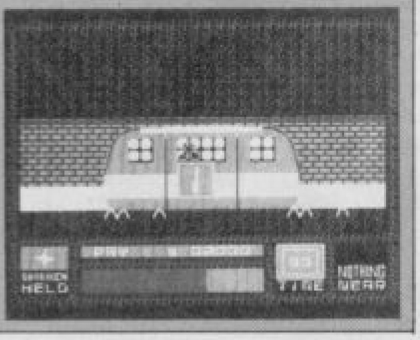
FACTS BOX

Reasonable compilation of mostly above average games. No real winners but no real 'padding' either

☆	NOW GAMES 3
☆	Label: Virgin
★	Author: various Price: £9.95
★	Memory: 48K/128K Joysticks: various
★	Reviewer: Graham Taylor

Digital's **Tommahawk.**

Critical Mass is a multi-directional scrolling space game. You control a little space ship and scroll around a planet that seems to have been stolen from *Dune* (some pretty impressive worms which leap out of the sand) and hurtle around through some pretty rocky terrain looking for an anti matter plant to disable. First appearances are a bit deceptive on this one, it looks rather impressive on screen but isn't such good fun to play. Worth some attention if you haven't seen it however ■



YOUR CHANCE TO WIN A SAGA COMPLIMENT



*Employees of EMAP or any firm associated with the Compliment package are prohibited from entering

Saga Systems' Compliment could be the most exciting Spectrum add on ever — combining printer, keyboard, disc drive and software in one totally integrated package.

Normally the Compliment retails for £345 but this month SU is offering one free!

Prizes

Alongside the complete Compliment system for the winner we have ten runners-up prizes of all the compliment software (fully compatible with an ordinary Spectrum system) on disc or tape. This includes the **Last Word** wordprocessor and software extension, **Masterfile** database and **Omnicalc** spreadsheet

What you have to do

Below is a list of names associated with the Compliment system — names of companies who have contributed business software to the system and names of hardware and software included within it. Which one is the odd one out?

Opus
Last Word
Cambell Systems
Masterfile
Microl
Saga Systems

Send your answer* to Compliment Competition, Sinclair User, 12/13 Farringdon Lane, London EC1R 3AU. Closing date for the competition is January 5, 1987

Name......................................

Address......................................

....

....

Odd name out......................................

If I win software I would like it on Tape ☐ Disc ☐. Tick as applicable.

SPECIAL OFFER

RAINBIRD: BRINGING ART TO THE PEOPLE



Sinclair User strikes a blow for the serious Spectrum user.

How come its always joysticks and games that get the special offers? What about us serious owners who want to put our micros to artistic uses? Where do we stand in the special offer stakes?

We stand right here because this month *Sinclair User* has on offer, exclusively, the highly regarded (and totally serious, if also fun) Art Studio from Rainbird.

Art Studio is more than a simple art program, it features advanced features like *Magnify* and *Zoom* for detailed work, *Cut* and *Paste*, a whole range of definable *Fills* and full compatibility with most joystick interfaces and most mice.

The system comprising the program on tape and a fully detailed manual usually costs £14.95. *Sinclair User* has arranged a special price exclusively for *Sinclair User* readers of £8.00. That's a saving of over 45 per cent — which is amolst half!

Now's your chance to get serious with your Spectrum.

Please complete the following enclosing cheques made payable to EMAP for £ per *Art Studio* package.

Send coupon and cheque to Sinclair User Art Studio Offer, 12-13 Farringdon Lane, London EC1R 3AU. Allow 28 days for delivery.

Name......................................

Address......................................

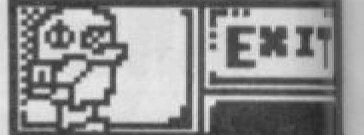
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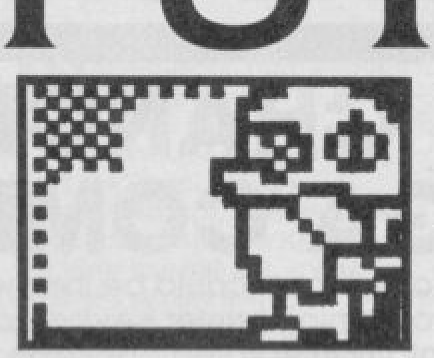
Please send me.......copies of Art Studio.
I enclose a cheque for £.....

ARCADE

REVIEW

FUTURE KNIGHT





Future Knight has all the ingredients of a truly masterful arcade adventure.

It looks neat, complex and addictive.

And the storyline is intentionally simple so you can get straight on with the business in hand — playing the game.

Randolph (he's a hero), while having a quiet sit-down and a pint of best, is jarred back into consciousness by a message coming through on the interstellar teletype. His heart-throb, Princess Amelia has been captured by aliens after her ship, the SS Rustbucket, crashed on a planet in the Zragg system. Seems like a tough break for her.

Every space-hero knows quite how impressive you can be while rescueing maidens from the clutches of evil slime-monsters and Randolph is no exception.

It's essentially a ladders-and-platforms-with-a-few-other-sorts-of-things thrown-in type of game.

The graphics are very clean. While not boasting a whole lot of detail, they are nicely animated if a bit 'cutesty'.

You spend your time being bombarded by horribly unpleasant beasties of wide varity. Ghosts team up with flying saucers, and a whole host of other anti-social characters to give you a tough time.

Along the way, you'll discover numerous items which will help you on your mission. For example, the bomb will destroy every alien on the screen, and restores your constitution to maximum strength.

There is also a 'confuser', a handy little piece of equipment. Once you have one in your pudgy little suit-clad mitts, you can frazzle the aliens' intelligence — preventing them from posing all but the most abstract of threats.

Other items you can use are a 'bridge' spell, with which you can bridge gaps, an 'exit' pass, allowing you to use exits which may be locked and the 'platform' key which builds a platform.

At some points in the game, you'll find yourself confronted with a huge alien which wanders around in what looks like a 21st century walking frame, squishing anything in sight.

Obviously you're going to have to defend yourself and there's a selection of weapons — some prove more effective at certain times than others.

If you leave Randolph standing still for too long a period, he'll wave at you as incentive to get a move on. Leave him in the same spot for much longer and things start to get really desperate: Randolph will go completely bezerk, spinning round and round, flailing his arms and panicking in an astoundly convincing manner.

Ignore him then and the chances are his constitution (shown at the bottom of the screen — maximum 999) will plummet at a tremendous rate.

The graphics are very smoothly animated, and Randolph waddles about the screen with a degree of fluidity equal to Gremlin's recent chart hit **Jack the Nipper**. Jumping around the playing area is easy to get the hang of, as you can generally reach just about any part of the screen with a good jump. All this, and you can fire in mid-air too ■

FACTS BOX

Quality platforms and ladders with considerable scope for exploration. Entertaining enough to make you want to beat it

☆	FUTURE KNIGHT
★	Label: Gremlin Price: £7.95
★	Joystick: various
★	Memory: 48K/128K
★	Reviewer: Jim Douglas

HINTS AND TIPS

● Don't rush off into different areas of the game without exploring the early screens first

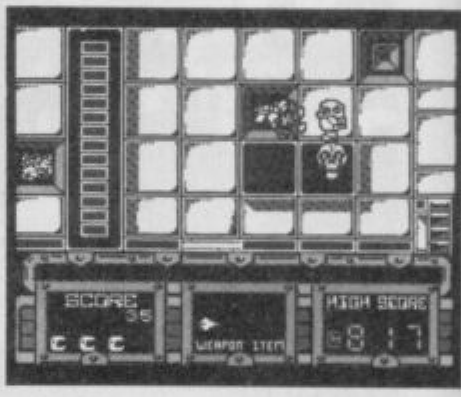
● Try to get the safe pass which is most useful in the early stages

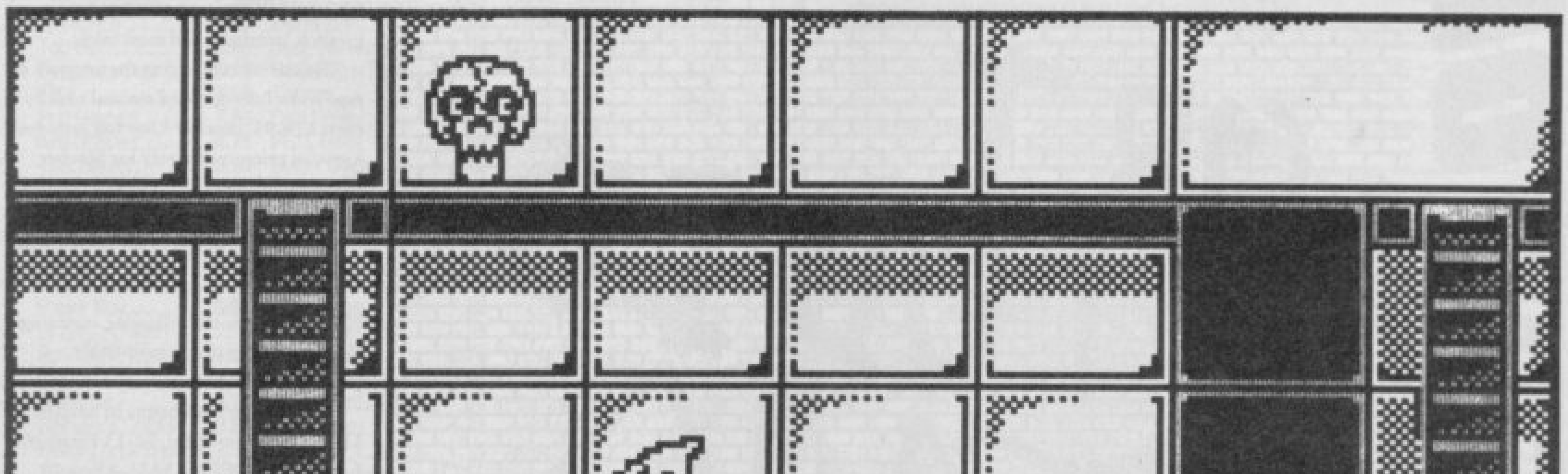
● The fireball is by far the best weapon — it will kill the aliens, but leave other items on the screen intact

● There are three exits in the early stages which lead to other parts of of the spaceship

● The princess can be found in the second dungeon area, by a big droid

● You'll need the release spell, though, if you want to free her





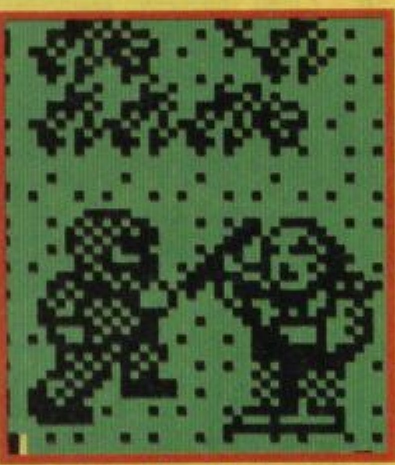
AVENGER

Avenger is not **Gauntlet**. It isn't really even **Gauntlet**-inspired although just taking a quick glance at the game you'd be forgiven for thinking otherwise.

It's also true that if you like **Gauntlet** you'll like **Avenger** but a spin off (or rip off) it is not.

The game is based quite closely on a fantasy game book by Steve Jackson and Ian Livingstone. The plot is, theoretically, a sequal to **Way of the Tiger**. In that game you did your training — now you enter battle. Your objective is to grab the scrolls of Ketsuin. For reasons beyond easy retelling grabbing the scrolls will appease the God Kwon and release him from eternal torment. Since Kwon good turn deserves another, off you go. (I can't believe you wrote that — Ed.)

The playing area is a massive 300 screens depicting Quench Heart Keep, wherein the scrolls are hidden, guarded by hundreds of assorted monsters, locked doors, traps and the sheer complexity of the maze. Your view of the rooms, pathways, doors, stair and other features of the keep is top-down, like . . . well, like

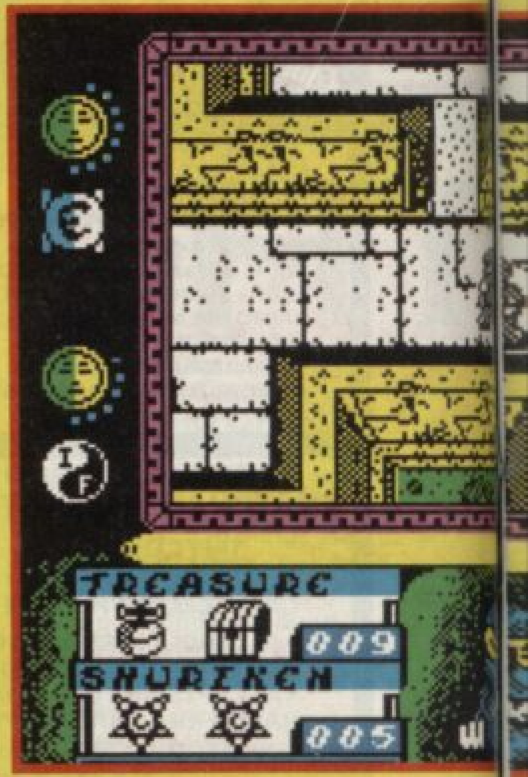


▲ Crack heads and ask questions later ● OK forget the questions

Gauntlet I suppose. Your character is, however curiously drawn side-on — this gives the advantage of interesting looking animation when you beat up a wandering minotaur or spider but makes the perspective seem a bit odd.

Whilst there is near continuous monster bashing, just like that Other Game,

FACTS BOX
Highly inventive game with 300 scrolling screens. Superficially it looks like Gauntlet but the gameplay is more sophisticated
AVENGER Label: Gremlin Author: in-house Price: £9.95 Memory: 48K/128K Joysticks: various
Reviewer: Graham Taylor
★★★★★



playing **Avenger** requires a wider variety of skills. There is a definite strategy bias.

The first problem that

HINTS AND TIPS

● Watch all energy levels closely — it is easy to miss the fact that you are about to expire

● Call on Kwon to restore energy but not too frequently — if he gets upset it's curtains

● Make a map — more specifically work out how many keys are found where — getting through may depend on your getting the right number in the right order

● Use schuricans wisely, you get a very limited number and you can often simply outrun monsters

● Watch out for messages from Kwon. These scroll across the bottom of the screen and contain important information

● Different enemies have different attack patterns — it isn't random and you can develop defensive tactics



The year is 1942 and the place is Germany. You're at war and whilst out on a secret hush-hush mission (probably to locate Hitler and photograph him for the family album) something goes wrong and before you can say jackboots, you are encarcerated within a high security POW camp.

Being a pretty modest fellow, you casually let slip that no POW camp has ever kept you prisoner (in fact as Rambo in a previous Ocean game, you singlehandedly freed a POW camp, stole a helicopter and destroyed as much of the enemy as you could lay our bazooka on).

Quite simply, **Great Escape** by Denton Designs (who did **Shadowfire** amongst other things) is brilliant in both concept and design. It has a wonderful action-packed story, some very clever routines and is graphically superb.

The aim of the game is to escape — not an easy task obviously.

Camp life is a series of routines: an alarm bell signifies when to get up, when to have breakfast, go to roll call and when to exercise, etc. Left alone, you, as our hero, will dutifully follow everyone else at their tasks. However, you can take over the controls at any time, thereby galvanising our hero into action.

Letting your man just fall in with everyone else at first is best as you can monitor each guard's moves. Once familiar with all this you can quietly slip away and explore the various huts and offices, being careful to return to the pack on the alarm bell call.

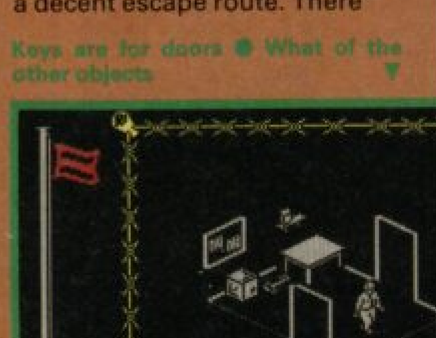


▲ The mess hall could it contain more than food

The layout of **Great Escape** is very similar in design to **Fairlight** with its black and white diagonal presentation, which scrolls beautifully as you move your little figure around the camp disappearing behind buildings and walking behind barbed wire. No attribute problems here. The movement is lifelike: guard dogs jump up at you if you venture too close to the perimeter wire and sentries in the control towers march up and down in sequence — don't move when they're looking your way.

Great Escape is all about finding objects, (keys, torches, tools, etc), locating a safe place to stash them, and working out a decent escape route. There

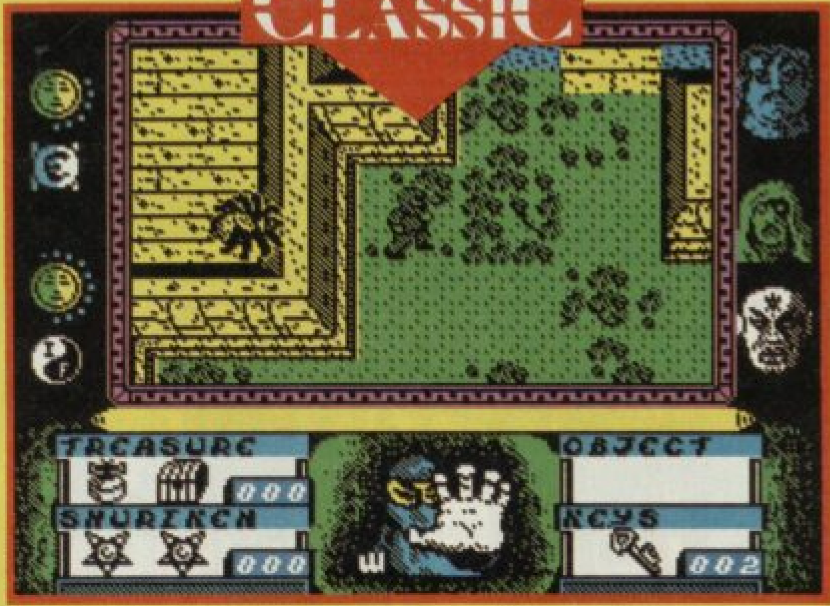
Keys are for doors ● What of the other objects ▼



are various routes to choose, each needing its own type of equipment, and once you've got everything you wait for night to fall and away you go. At night powerful searchlights constantly scour the camp and it goes without saying that if you're caught in the glare, the alarms go off and you're sent into solitary confinement for a while and all your equipment is confiscated. This is also true if you happen to bump into the commandant on his rounds —







▲ South of the bridge ● Two keys left ● Not enough ● Main exit is south but you may have to visit the spider first

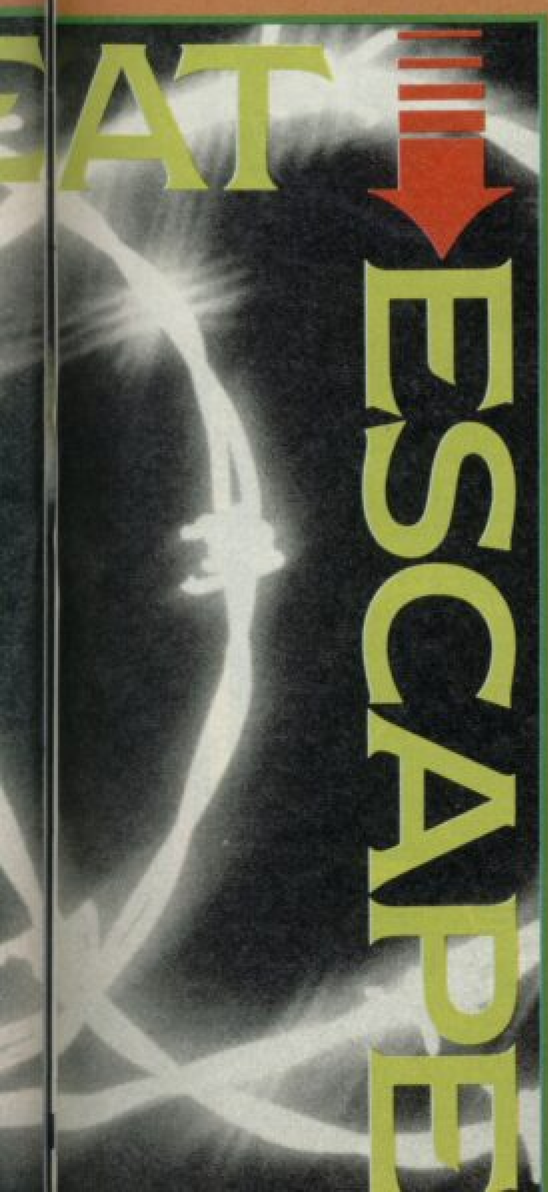
confronts you is keys to doors. Groups of keys are located in certain places such that the exact order you move from place to place becomes vitally important. For example if you use the first keys you discover in the wrong order, you will get stuck. Hopelessly so.

There are six floors to the keep and getting between them means using trap doors and grids. These links between levels are not only often difficult to find, they usually have to be 'opened' in some way — which means finding specific objects.

There are around ten useful objects in the game: to link the crowbar with grill opening requires no great intelligence but what of the magic cord? There is treasure too, which you can colect but it isn't the main objective of the game and can distract you from the main task.

If you need a point of comparison then **Avenger** is like **Gauntlet** with marginally less wholesale destruction and quite a lot more by way of puzzles. It looks sort of similar but in some ways the animation is better.

I hope **Avenger** doesn't get submerged beneath a tide of **Gauntlet** clones. It is a different and perhaps superior sort of game ■



so be warned.

In my hut, I discovered the entrance to a tunnel (obviously a previous guest didn't like the cooking or took exception to the sleeping arrangements), and I found a labrynth of old drains under the camp. These are fun to explore and a torch is a must here due to the lack of any electrics.

The whole game generates a very real atmosphere of actually being there, and you *do* get very nervous if you're stuck in an office when the roll-call bell sounds — what to do, miss roll call and have everyone searching for you, or leave the office you've tried so hard to find and scurry back to the pack? Not an easy choice.

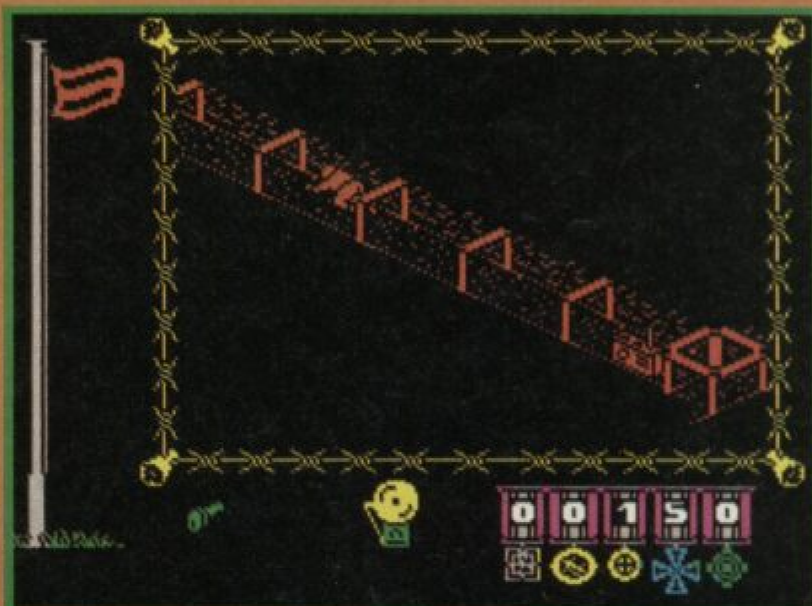
FACTS BOX

The best thing Ocean's done for ages. Highly imaginative plot, gameplay and graphics. Miss it at your peril

GREAT ESCAPE
Label: Ocean
Author: Denton Designs
Price: £9.95
Memory: 48K/128K
Joystick: various

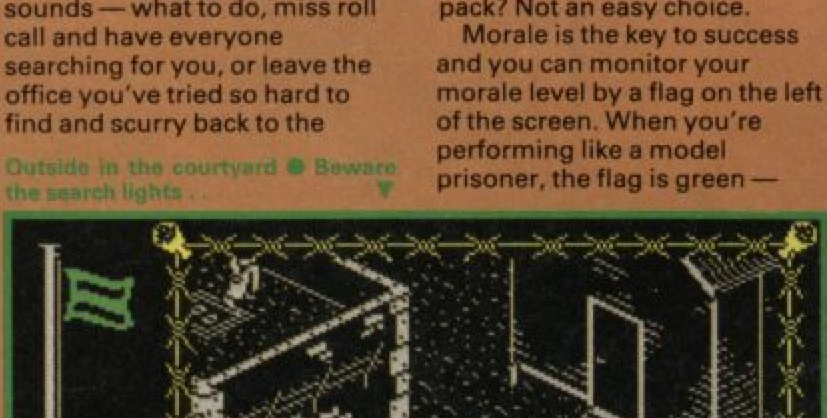
Reviewer: [signature]

★★★★★



▲ The tunnel ● An escape route? ● Make sure you've got the torch

Outside in the courtyard ● Beware the search lights . . ▼



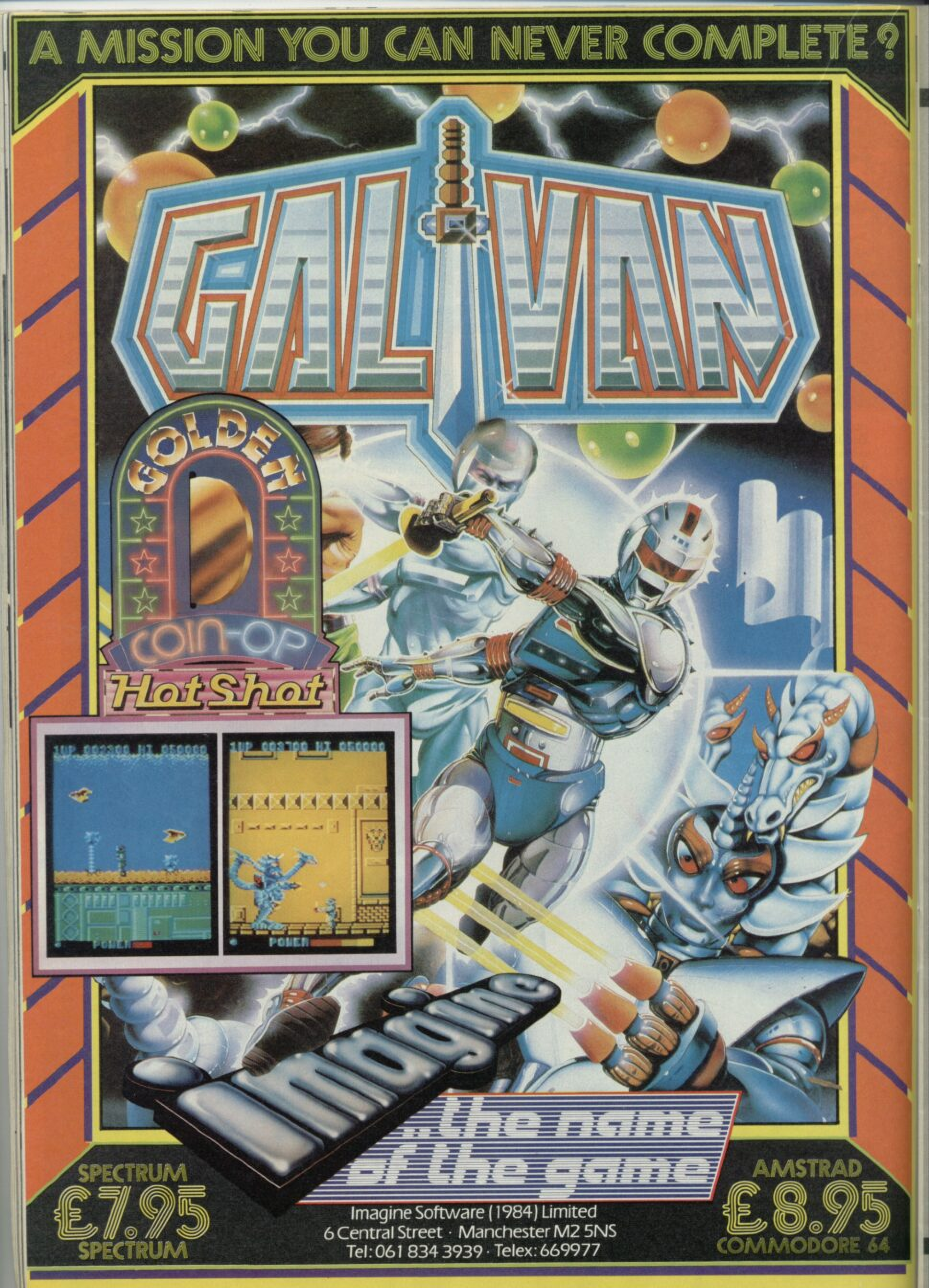
Morale is the key to success and you can monitor your morale level by a flag on the left of the screen. When you're performing like a model prisoner, the flag is green — once you start misbehaving it turns red. If you do get caught the flag drops down the pole, and if it reaches rock bottom you become a mindless POW — all thought of escape is now the furthest thing from your mind. Your score is monitored on a list of ribbon-held medals and it is the medals themselves which display the score. Very clever!

Ocean has made a few boo boos lately, with some very average releases like **Knight Rider** and particularly **Street Hawk**, but with **Escape**, they have a sure winner.

The fascinating part about it is once you've escaped it's not the end, 'cos you can always try a different route and see what happens.

Great Escape is terrific fun to play, highly original and for once isn't just an exercise for wholesale slaughter (in fact there's not one dead body in the game).

A future No 1, I'd say■



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WINNERS

Spectrum 128K+2



Below are the names of the lucky winners of twenty-five absolutely exclusive T shirts and one poor sole who has to make do with a mere Sinclair Spectrum 128K+2!

It's a tough old world.

Alas our advanced Cray-controlled database still hasn't quite got the hang of putting things into alphabetical order so you may have to look pretty closely to see if you've won. Sorry!

Here are the answers to the questions:

1) Practical Wireless
2) Black
3) Jupiter Ace
4) Psion
5) Robert Maxwell

Check back to October 86 for the questions ■

The winner of the 128K+2 is Mark Dobinson, of Basildon, Essex.

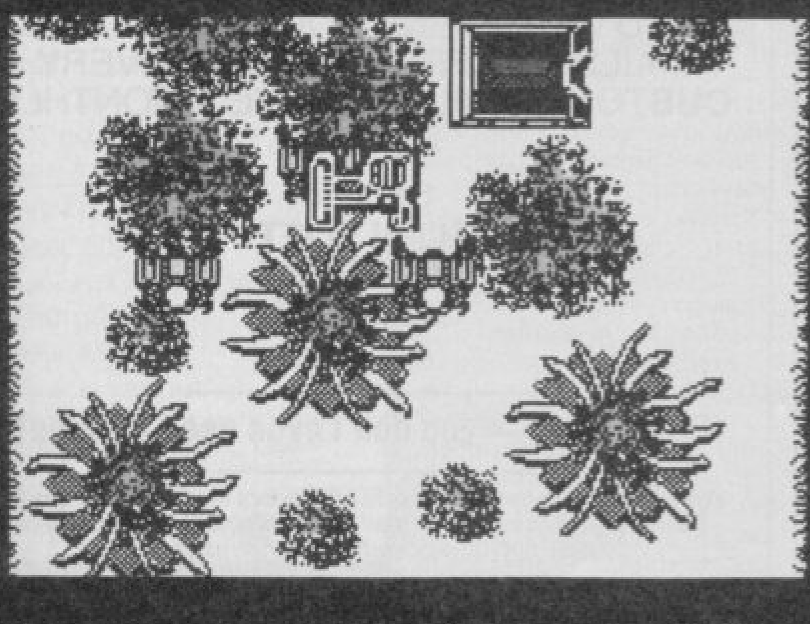
Runners up:
R Rawlins, Ardleigh Green, Hornchurch, Essex; Andrew Backley, Stretford, Manchester; Keith Hughes, Cheltenham, Glostershire; G D Brighouse, Long Eaton, Nottingham; Mats Sjoblom, S126 50 HAGERSTEN, Sweden; Mr J D Piper, Camberley, Surrey; Mr Dodd, Edgeware, Middx; David Edwards, Somerset; S Ghani, Middlesbrough, Cleveland; John Y Burns, East Kilbride, Scotland; Jim Wood, West Watford, Herts; Wael S Shouly, London E11; Michael Sleight, Doncaster, S Yorks; Michael Ashby, Potters Bar, Herts; P D Rose, Beaconsfield, Bucks; Michael H R Cutler, Marlow, Bucks; David A Jennings, Sheffield S10; Robert Kirton, Peterborough, Cambs; Ian Duncan, Angus, Scotland; John Phillips, Saltash, Cornwall; Adrian Dennis, Thornton Heath, Surrey; Mr A Thompson, Cheltenham; J Streeter, Brighton, E Sussex; Mr J K Marston, Wimborne, dorset; Richard Shaw, Bidgewater, Somerset.

Faster Than Light

Wooooooooosh went the headline and wooooooooosh came your entries, sacks and sacks of them for our Faster Than Light Competition in the September issue. The ten sweatshirt and game winners and fourty game only winners are printed below.

Answers to the questions were:

1) Cuchulain
2) Ad Astra
3) Dun Durach ■



***10 Winners* of game and shirt:**
R Browne, London SW17; Alan Walton, Blackburn, Lancs; James Kuick Ren Yuan, 10470 Penang, W Malaysia; T V Wilkinson, Dunchurch, Rugby; Agustin Malave, 28001 — Madrid, Spain; Jonathan Tan, Lymm, Chechire; Scott Marjoribanks, Camelon, Falkirk, Scotland; James Stopps, Didcot, Oxon; Andrew Males, Stevenage, Herts D Lilley, Bognor Regis, W Sussex.



***40 Runners up* of game only:**
Lee Hodgson, Tewkesbury, Glos; Simon Quainton, Wickhambrook, Sufforlk; Peter Martin, Strovolos, Nicosia, Cyprus; J K Marston, Ferndown, Dorset; Lasse Eldrup, 3 265 D Huidoure, Denmark; Mark Williams, Kiddiminster, Worcs; Ian Wakefield, Crowborough, Sussex; Stephen Henstead, Pemberton, Wigan; Robert Norton, Low Hill, Wolverhampton; Julian Goacher, Limerick, Eire; Alan Thomas, Colford, Glso; P Rankin, Wigan, Lancs; Noel Anastasi, Mosta Malta; Stuart Thurston, Fernhill Heath, Worcs; Mark Davies, Haverfordwest, Dyfed; R N Newall, Shipley, W Yorks; Haroon Rashid, Leytonstone, London E11; M J Payne, Portsmouth; Alistair McLeod, Dunfermline, Fife, Scotland; Hugh Neilson, Galashiels, Scotland; M Smith, Denton Manchester M34; Gabriele Gennuso, Rome, Italy; Brian McCorkell, Forres, Moray; Sean Male, Hilsea, Portsmouth; Ryan Terry, West Heath, Birmingham B31; Matthew Pink, Harpenden, Herts; Steven Wilson, Netherfields, Middlesborough; Ian Esling, Sandway, Cheshire; John Pinheiro, 85249 Sinsvall, Sweden; Sam Mahlane, London N11; Rob Brown, Hull; Sverre Sandvik, 1347 Hosle, Norway; Paul O'Dowd, Sligo, Eire; Andrew Fernandes, 4785 Trofa, Spain; B J Dichinson, Cowdenbeath, Fife, Scotland; Iain Humber, Carlton, Nottingham; Roderick Maclean, Straith Gairloch, Ross-shire, Scotland; Stuart McMewamin, Troon, Ayrshire, Scotland; Stephen Davis, Wesley Castle, Birmingham B29; Damian Mahone, Wilpshire, Blackburn, Lancs



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STREETHAWK

ARCADE REVIEW

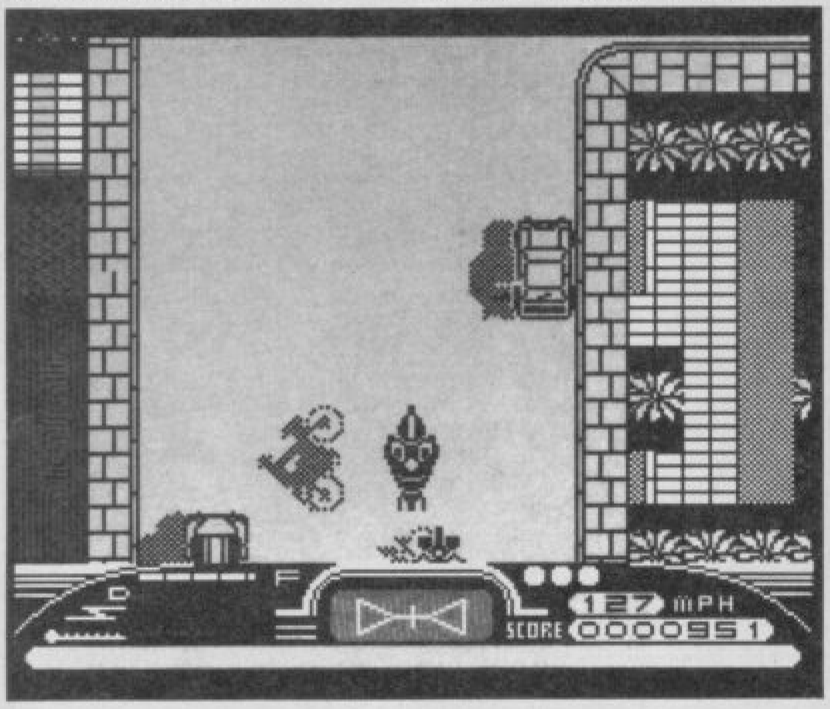
Street Hawk has finally arrived from the people at Ocean. After what seems like years and years of waiting with baited breath, the *SU* team finally got to play the game. Unfortunately, it's not up to much.

In the game, and the Saturday-afternoon-round-about-lunchtime TV show on ITV, the hero is one Jesse Mach, who's made the man responsible for testing Street Hawk, a bike with all the abilities of K.I.T.T. from *Knight Rider*, but with half the number of wheels.

You begin in the centre of a light blue road, standing at a complete halt, with cars, bikes and trucks over-taking you. Yup, you've gotta move your butt if you don't wanna be splattered all over the street.



The snag is the graphics scroll down the screen smoothly but at anything but 'turbo' speed. It's difficult to distinguish between the snails' pace (but legal) 55mph and the ridiculous max of 285mph. The bike isn't very responsive, either.



FACTS BOX

Although entertaining for a brief time druing the shoot-out, it doesn't have an awful lot to offer. On ya' bike

STREET HAWK
Label: Ocean
Price: £7.95
Joystick: various
Memory: 48K/128K

Reviewer: Jim Douglas

★★★☆☆

HINTS AND TIPS

- **Jump an on-coming car, rather than trying to avoid it**
- **In the shootout, try and hit the robbers as soon as they leave the building**
- **Don't chase after one if you miss with the first shot — it let's the others escape**

Fortunately, you're saved from many collisions by the Jump facility. Pressing *Space* will cause your bike to leap into the air, allowing you to clear vehicles in a single bound.

After riding for a little while, or shooting a certain amount of bad guys, you find yourself at the scene of a robbery. Funnily enough, every time a robbery takes place in the game, it's Joe's Joint that gets hit. Poor old Joe must be getting pretty sick of sluicing his doorstep down because, as the masked raiders leave the shop, you must gun them down.

You control a crosshair sight. Line it up on the fleeing villain before delivering a stiff dose of justice.

The real problem with the game is that it is simply too simple. It could be defined as a **Spy Hunter**/3D Shootout. Were it a budget title, **Street Hawk** would be nice, but it's not ■

WINTERGAMES 128



The slush of snow on skis, the red noses, white faces, and the comforting crack of ice as your opponent sinks beneath Innesbruck skating rink.

US Gold's reasons for a 128K version of **Winter Games** are clear. It loads in one ten-minute marathon — rather than two — has continuous music on some events and sound effects which raise a shiver in the jacket of even the most seasoned skater.

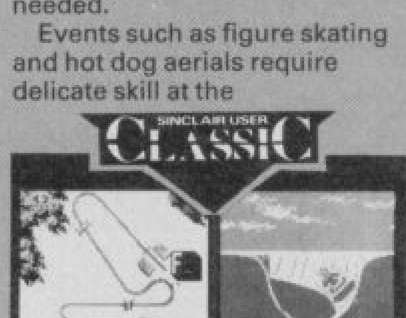
There are seven events in which one to four players take part. Skill is required for figure skating, free skating and hot dog aerials, Brute force — the rugged hand on the joystick — wins speed skating, ski-jump, biathlon and bob sled.

Most of the games have a musical intro, quickly silenced by a press of key or button. When you start skating or skiing the 128 makes a satisfying electronic swish which bounces out of the television speaker. On events of endurance the swish is replaced by a pulse that rests at 60 beats and climbs to 130.

Endurance events require joystick bashing reminiscent of **Daley's Decathlon** but a slow rhythm, rather than a frantic panic, is needed.

Events such as figure skating and hot dog aerials require delicate skill at the joystick. You're out to impress the judges with an acroabatic display what will earn you a gold.

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Medal tables and score boards are created when you've been through your set pattern of events — all or a selected few. You're given your ranking — medals — after each event but the final score is calculated on a points system which is identical to that used in the Winter Olympics.

Winter Games is a package which surpasses all others, including those inimitable joystick crunchers **Daley's Super Test/Decathlon** ■

FACTS BOX

A piste de resistance of graphic style and aural wit. This new 128 version adds sound and it goes in all in one load

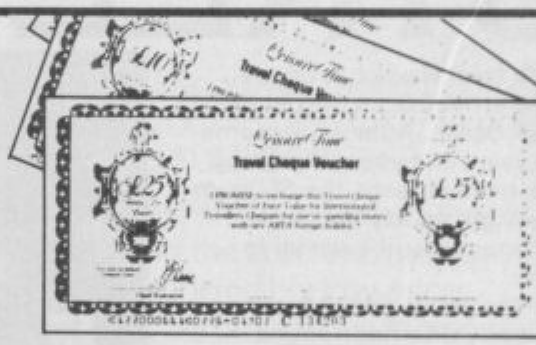
WINTER GAMES 128
Label: US Gold
Authors: Ocean/David Thorp/Epyx
Price: £9.95
Joystick: various

Reviewer: John Gilbert

★★★★★

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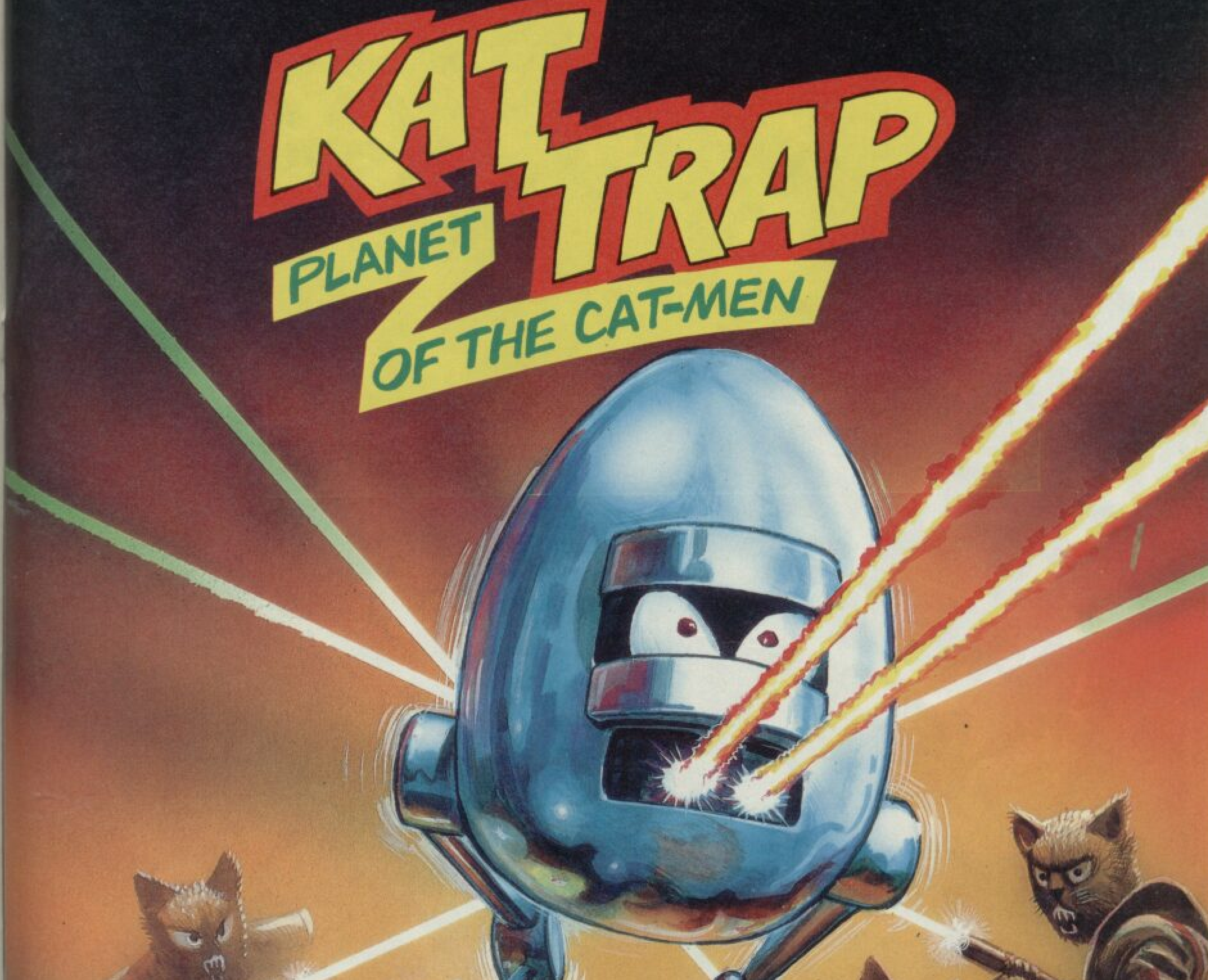
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RAM JAM

Simon Dunsten and George Stone from Ram Jam wander through the building site next door to their office without batting an eyelid. The cacophony emanating from somewhere beyond the large blue screens must surely be an enormous distraction. "You get used to it," says Simon.

Sitting in The Coffee House — which isn't a coffee house at all, it's a pub — Simon and George chatted to me about politics, world affairs, trivia, alchol, and — er — oh yes! Games design.

Situated in the very centre of the 'busy' part of London, just off Carnaby Street and about fifteen seconds away from a Big Record Company and a Big Film Company, the Ram Jam Corporation appears every bit as grand as its neighbours.

When I talked to them, they were recovering from the rigours of finishing Dandy, Electric Dreams' Gauntlet-alike. Although there was a final glitch that still needed fixing, the whole conversation seemed like a huge sigh of relief.

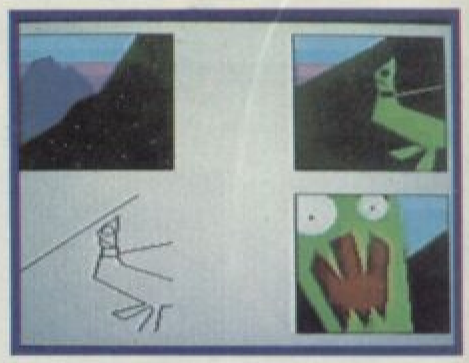
George found the *Trivia* coin-op, which burbled away too much of a temptation. Forcing change into the little black slot in a most unsettling manner, he bashed away with a surprising deal of precision, answering questions about which I was clueless.

While George thought loudly, Simon explained how he came into contact with his first computerized gadget. "It was a con job! I'm an artist really, but I like the idea of putting pictures on to a TV screen. It's like another medium. If you think about what happened when oil paints were first invented, there was a revolution in the way people thought about pictures. It's the same with computer graphics."

George, meanwhile is complaining vociferously about the time limit given to answer the questions. He sits down, credits used up. "Previously, I used to write technical brochures and leaflets around the time the electronic chip first arrived. It was also the time of the TRS80: 'Any colour you want, so long as it's green' and 16 glorious K."

George is carrying with him a 'portable' telephone, which would be very impressive if it wasn't quite so enormous. As it is, he is forced to wear a large waist-coat sort of coat over his shirt acting as a sort of harness.

The Ram Jam Corporation has built itself quite a reputation as producers of high-class software: Valkirie 17, Dandy, Twice Shy, Expolrer, Terrors of Trantoss. Their offices are impressive in a lived-in sort of way. Leading me through the dimly lit corridors, Simon announced that he would take me to meet a programmer. A man of his



▲ Ram Jam's computer-aided storyboarding



▲ The Ram Jam Corporation experience a large earth tremor during a teabreak

SOLID IMAGE

Joey is a man of mystery. He uses no surname! Along with his mate, Glyn Williams, he set up Solid Image one year ago. Since then, well, exactly what have they been doing?

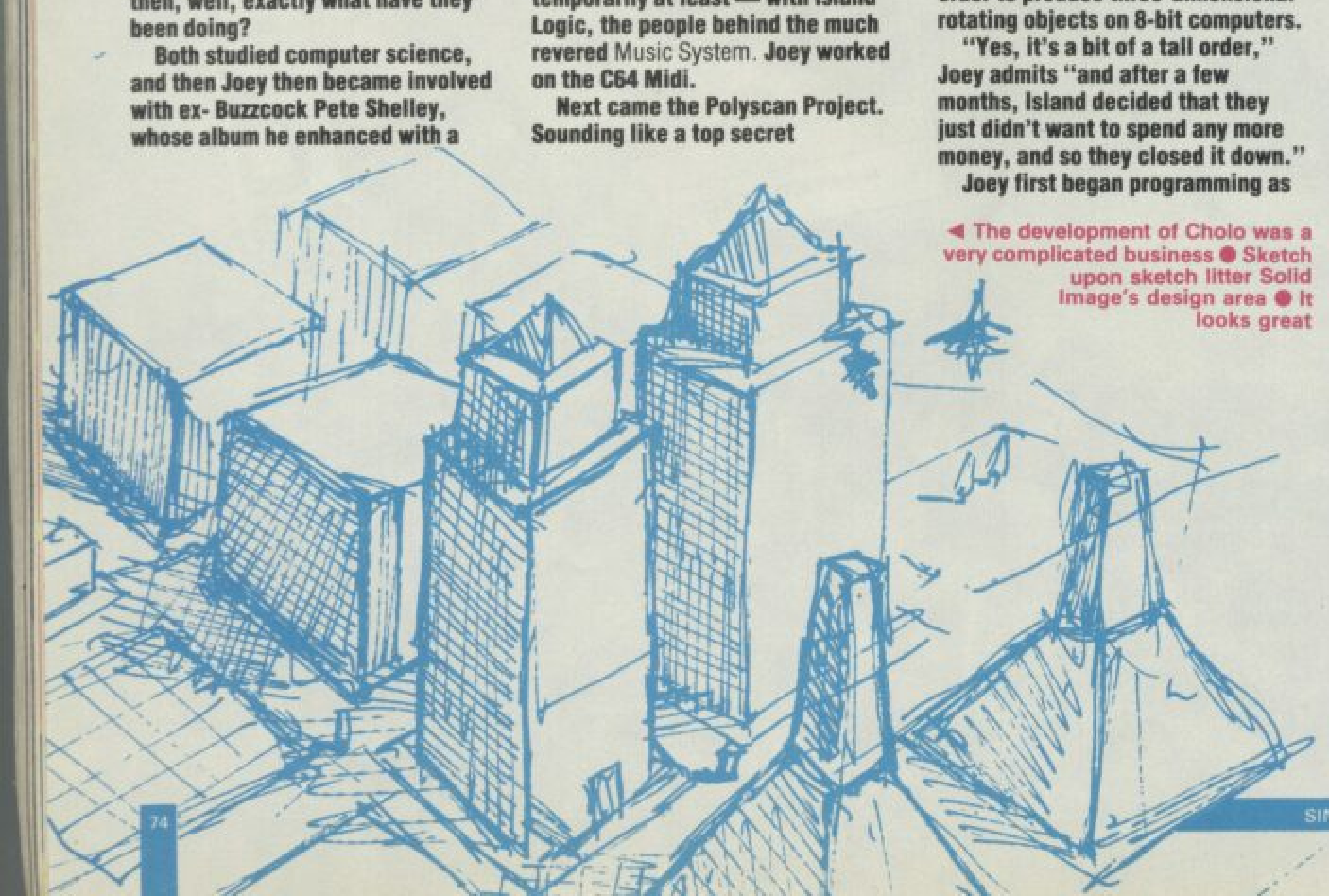
Both studied computer science, and then Joey then became involved with ex- Buzzcock Pete Shelley, whose album he enhanced with a computer program which added graphics in time with the beat. From there, Joey moved to Bug Byte software for a while, and settled — temporarily at least — with Island Logic, the people behind the much revered Music System. Joey worked on the C64 Midi.

Next came the Polyscan Project. Sounding like a top secret government operation — actually, not a million miles away. . . it involved Joey and Glyn working away for months and months in order to produce three-dimensional rotating objects on 8-bit computers.

"Yes, it's a bit of a tall order," Joey admits "and after a few months, Island decided that they just didn't want to spend any more money, and so they closed it down."

Joey first began programming as a break from studying Law at university. "Someone said there was money in it, but don't believe it." I don't believe it.

Solid Image find that they are only now beginning to make a name in the industry, and as a result their





◀ The development of Cholo was a very complicated business ● Sketch upon sketch litter Solid Image's design area ● It looks great

MICRO MERCENARIES

Just who are these people who put together computer games? They're a horrible lot, aren't they? They spend hours and hours locked away in rooms with very little light, too much food and very strange records. They're hardly human at all, are they? Jim Douglas quashes the oldest myth in the industry, and talks to some very normal people ■

word, that's Simon.

Kevin is anything but a typical programmer. Looking more like someone-who-should-be-very-famous-indeed than a boffin. He sits at a graphics tablet, beavering away in a casual sort of manner with a science fiction game the Corp is producing. "It's only in the baby stage at the moment," he admits "but it's looking good."

Simon and Kevin begin discussing some technical ideas involving concepts so baffling they may as well involve time travel. It turns out — to my relief — that they were talking about time travel after all. The game features differing realities, which the player can visit, depending on the events s/he encounters elsewhere in the game. Confused? You should be.

RamJam don't believe in storyboards. "Storyboards are useless!" says Simon. Instead, they produce mock-ups of screens on the computers, and work through their problems that way. "After all, a computer screen bears very little relation to a piece of paper. I mean, it's flat, OK, but the colours and all the rest are completely different."

Their adventures, which were the real inspiration to get involved with the computer business in the first place, are created using the 'BIRO', their own adventure writer. BIRO is currently being used to finish Three Days in Carparthia, a game that RamJam assures me isn't going to go the same way as some other notable adventures for which everyone waited so long.

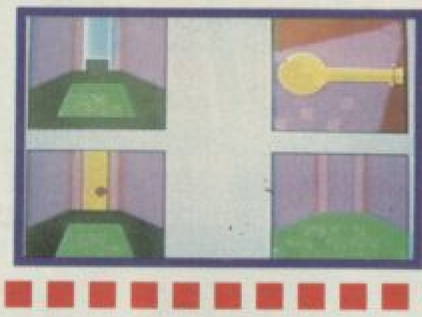
"People have a very blinkered attitude when it comes to quality. Simply because they don't know what is possible, they are prepared to put up with an awful lot of crap."

The toughest program they have had to produce was Dandy. "Just because of the space limitations on the computer." says George.

RamJam find themselves in the priveliged position of not having to wander around, offering their services to any hapless software empressario who happens to be passing. "It's a small business, and everybody seems to know what everybody else is doing. We've worked with quite a few people."

Also in the pipeline is Shadow Warrior — a true-to-life Ninja game (whatever a true-to-life Ninja game is) and a diplomacy simulation in outer space. Apparently, "Activision want something on nuclear physics."

What do they think, in general, most programmers want to be? Simon: "Loved". George: "Rambo" ■

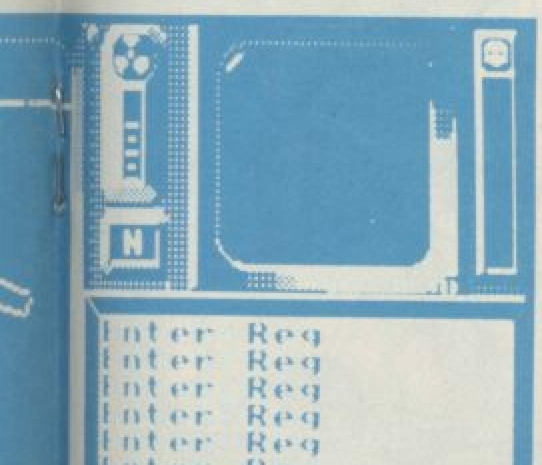


work involves quite a lot of doing the round of companies, seeing if anyone was interested in what they had to offer.

Cholo is their first big break. It's a wire-frame graphics epic being produced for Firebird. They produced a vaguely Elite-style 3D graphics system, which could create both indoor and outdoor scenes, and then visited various people. Firebird were very interested and that's how it happened. That was about six months ago. At the moment, the finishing touches are still being added ■

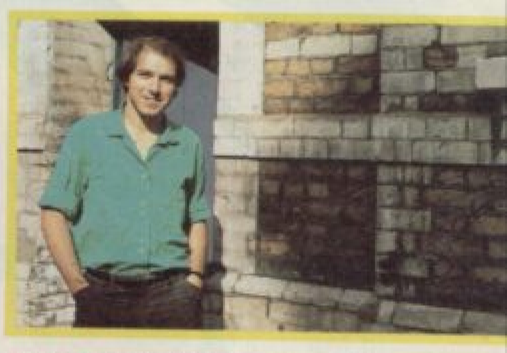


▲ Working design for a vital Cholo robot



◄ Even more three-dimensional wire-frame graphics. A 'working' design screen

MARK EYLES



Mark Eyles reclines in his chair, black coffee in one hand, trusty Filofax in the other. The ex-maths-teacher-made-good leafs through the delicate green pages that match his Next shirt rather too well, and owns up to being responsible for Back to the Future and Hijack.

Eyles first came in contact with computers in the earliest days of the ZX80, the wonder machine that could do miniscule, but nonetheless astoundingly important things while looking closely related to a primative calculator.

Unemployed after his one-and-a-half year tour of duty as a teacher, he began constructing hardware add-ons for the ZX80 for the then newly established Quicksilva. At the time, the company was almost entirely hardware based, and led the field for a considerable period. After its takeover by Argus Press, Eyles left the firm and took up holography.

He retained firm ties with Quicksilva's ex-boss Rod Cousens who set up Electric Dreams and Rod suggested he get involved with Back to the Future.

Mark picks up the story: "It just snowballed from there. I used to write to companies, asking if they were interested in games designs, and things like that."

Since then, he seems to have worked for just about every major company in the industry. He drops names like Ariolasoft, Melbourne House and Activision with the familiarity of a man who knows 'the biz'.

"I must have done around twenty-five designs this year and they've kept me pretty busy."

Busy is probably some way short of an exaggeration. On top of his new role as an ideas salesman, Mark is expanding his interests in holography and is also helping to write a children's book with an artist friend.

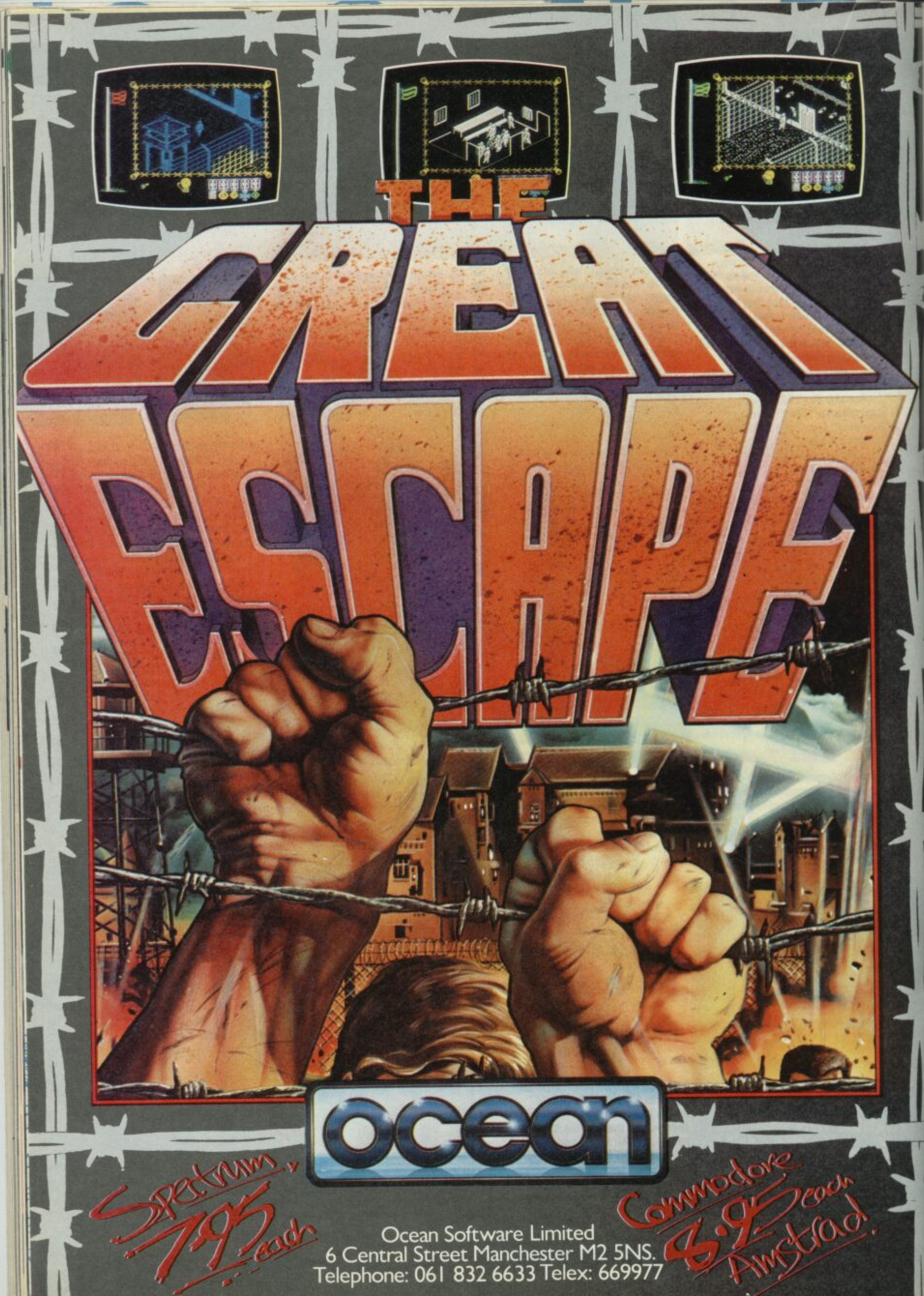
Crossing his legs and turning the pages of his burgundy bible once more, Eyles tells the story which all programmers will know so well. "Back to the Future was a bit of a rush. We knocked it out in about two months flat. We really wanted about twice as long to do the film justice, but the deadline was pressing. . ."

The word according to Eyles regarding the birth of a game is as follows: "There are three ways you can go about getting the idea for a game. First, there is your licencing deal. Then the software company may come up with an idea which it feels would make a good game. Finally, there will be an original idea from yourself."

Licencing deals are a dangerous breed. They often involve a large amount of money being expended in order to get hold of the name of the film/TV series/book, and the games



▲ The original storyboard layout for the Aliens main-screen ● Now the design is less cluttered, and only one character will be in view


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MARK EYLES

are often rushed out to coincide with an advertising campaign which is operating at the same time as the film/TV series etc.

Back to the Future was a prime example of this syndrome.

The software house's ideas are a little safer. Sometimes, as in the case of Hijack, the company (Electric Dreams) will approach a 'team' (Mark Eyles) with words to the efect of "OK, we've had a great idea for a new game. Why don't we produce a program based on a hijacking?"

The third method is much akin to a freelance writer, or first-time novelist, and involves approaching a software house directly for which you feel a particular style of game is suited. "It's a better to think about who you are going to see, and producing a set of ideas tailored for them, rather than simply visiting everyone with the same set of ideas."

Once an his idea has been accepted, he'll draw up a story board, giving an idea of how the game should play, a map if necessary, and a representation of how the screen should be laid out.

"Then," he shrugs, "it can go one of two ways. Either you sit in on the programming, or you don't. If you've done a decent storyboard, though, there shouldn't be any nasty surprises when you see the finished game.

Aliens, the program on which Mark was working at the time of writing, was designed almost entirely from the ideas and story in the script of the movie. Work was started on the game long before the film was released.

Mark now makes up dummy screens for his games on an Atari ST, in order to give the programmers and their respective bosses an idea of what the screen should look like when playing.

Which program is he most satisfied with? "Well, there is some stuff for Ariolasoft that is still to be announced, and Hijack for Electric Dreams. Each game is a different challenge. Each presents its own set of problems."

What is he working on at the moment? "There's a project for Melbourne House that I'm not allowed to talk about," he announces, his voice trailing off toward the end of the sentence, and turning over a page scarred with numerous red notes. "And there's Aliens, of course, for Electric Dreams, and Centurions and GoBots for Ariolasoft."

And away he goes, Clarks shoes, Filofax and all. A man with so much on his proverbial plate it will probably never be empty, who expresses an affinity for taking risks, and who has found an almost unique niché in the games world. One of a handful of individuals who earn their crusts from games designing, as distinct from programming ■

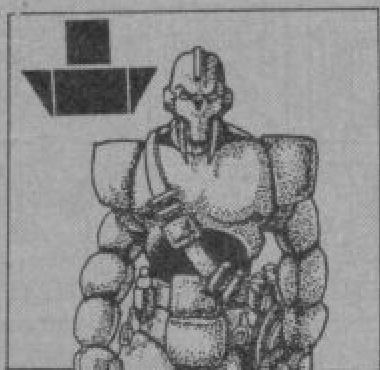
DENTON DESIGNS

Denton Designs — formed a year ago out of the remains of Imagine Software by John Gibson, Dave Colclough and John Heap — must be the most sought after contract coders.

Denton were the people behind Shadowfire, Enigma Force and Frankie Goes to Hollywood and have just released, again for Ocean, The Great Escape.

They have a reputation for being very secretive about their games designs, and are regarded as one of the most innovative software production houses around.

Their latest is Double Take for Ocean. It's a 3D stunning wierdo graphics/ strange plot epic which sounds terrific ■



DESIGN DESIGN



▲ Design Design: (l to r) David Fish, David Martin Welch, David Berrisford and Stafford

Graham Stafford follows the blue-print for programming success — if there is such a thing — reasonably well.

He became interested in electronics at an early age, through his school's Commodore system. This led him to buy and build a UK101 machine in 1979.

After this, Stafford moved to university, became disillusioned and, with a few friends, started up a Design Design in Manchester.

After releasing a number of titles independently Design Design now concentrates, it seems, on contract programming for other houses. Nexor was their last release under their own label.

Currently they are working on Nosferatu for Piranha, and Kat-Trap for Domark.

"My favourite program out of all the stuff so far is On the Run. The oddest was certainly Poddy 2112 AD, which involved a character a sort of K9 creature whould follow around."

At the time of writing, Stafford was deeply emersed in problems with Nosferatu. "It's a very, very big game. And it's very involved. I'm getting memory problems over and over."

Stafford, married to a primary school teacher and four cats, though not necessarily in that order, lives in a one-hundred-and-ten-year-old cottage which is set into a hillside.

He's also one of those ghastly people who can manage to eat a lot and not show it ■

DELTA 4

Fergus McNeill is virtually unrecognisable. For a long time he was instantly identifiable as a marginally shambolic figure, who could be seen wandering the streets of Hampshire in a *Marillion* T-Shirt, jeans, fluffy beard and open shirt.

So why the new image? "I was fed up of appearing in pictures where I looked like a hippy. I can't stand hippies."

Initially seeking comfort from a micro when his social life foundered: "a ZX81 was my first girl friend" — whatever that means "and it went on to kill off anything that may have remained of social life, too."

A self-confessed smart-alec at school, he collected 'a load of O levels' before moving to college and dropping out after about one month. He was also offered the honour of being parted with £12 pounds of his hard-earned cash in order to receive a piece of paper from MENSA. He's a clever man. He decided it was a waste of money.

The process of creating a game is reasonably ordained by the constraints of time and money. Operating in probably the most relaxed manner out of all the people mentioned here, Fergus and the Delta 4 'crowd' like to think of humorous situations before problems. "If you have a door with fifty-seven combinations, and you then try and build up a joke around it, you're going to have problems. If you get your humour sorted out first, it's easy to make problems along the way."

▼ Fergus: hippy backlash



Delta 4 is essentially six people. Fergus is backed up by: Judith Child, a storyline person, Stephanie Stranger, a co-author on the game scripts, and Jason Sommerville is currently working with Fergus on the Denis Wheatley games, Murder Off Miami and The Malinsay Massacre. Andrew "SPUD" Sprunt is their new 'public face' and administrative person.

Between them they must be the most overworked team in the business. Fresh from The Boggit, they're just completed The Colour of Magic for Piranha from the Terry Prattchett novel, there's the Level 9 work — which Fergus won't discuss fearing repercussions from non-disclosure agreements — the Wheatley titles and his own follow-up to The Boggit.

Another pet project is to do an adventure with a *Bladerunner*-type SF feel. "Society's totally fallen apart and you play the hero — the only bloke left with any humanity." Fergus turns out to be a big Harrison Ford fan.

All this and he's half way through his first novel ■

DAVE LOWE

Dave Lowe is a busy, busy man. When I spoke to him, he was in the middle of a bezerk period, in which he was programming the music for the 128K version of *StarGlider* from Rainbird *and* playing in a band every night. He's one of a Very small number of specialist programmers who produce music tracks for computer games — Rob Hubbard and David Whitaker (*Glider Rider*) are others of the select 'band'.

After producing the sound track for titles like *Rasputin* and *Buggy Blast*, both programmed with the 128's three channel sound synth, the *Star Glider* track will be the first 128K game track made up entirely of sampled music.

Being first bitten by the computer 'bug' in the heady days of the ZX81, Dave is a professional musician. It sounds a rather exciting life: "I've been to most places around the world, Europe and America a couple of times. The problem is, you don't make any money."

So exactly how does he go about making the Spectrum make such wonderful noises? "Well, I worked out all the routines that I needed while programming a the sound for a game called *Rasputin*, so I use those."

Sampled sound is another matter. For this, music must be played in a studio, recorded on to tape, digitised and then squished into a computer. Clever stuff, eh?

Although most of the micro music for computers Dave works on is still of the 'standard' variety — using the machine's in-built sound chips — he prefers sampling: "There's just no comparison."

"Writing for a computer is very similar to doing songs for bands" — he has worked with Scoby Smith, and Repro — "except that most of the tunes are only about 14 seconds long." He uses a CX5 and DX7 synth to produce the sounds, and you may find the occasional RX11 drum machine lurking around.

Dave says that to sample about 16 seconds of sound took 170K on the ST version of *Starglider*. "We tried it on the Amiga to start with, and when it took up about 420K, we realised that we would have to sacrifice some quality, in order to fit it into the computer." The 128K+2 version is somewhat shorter■



TIGRESS

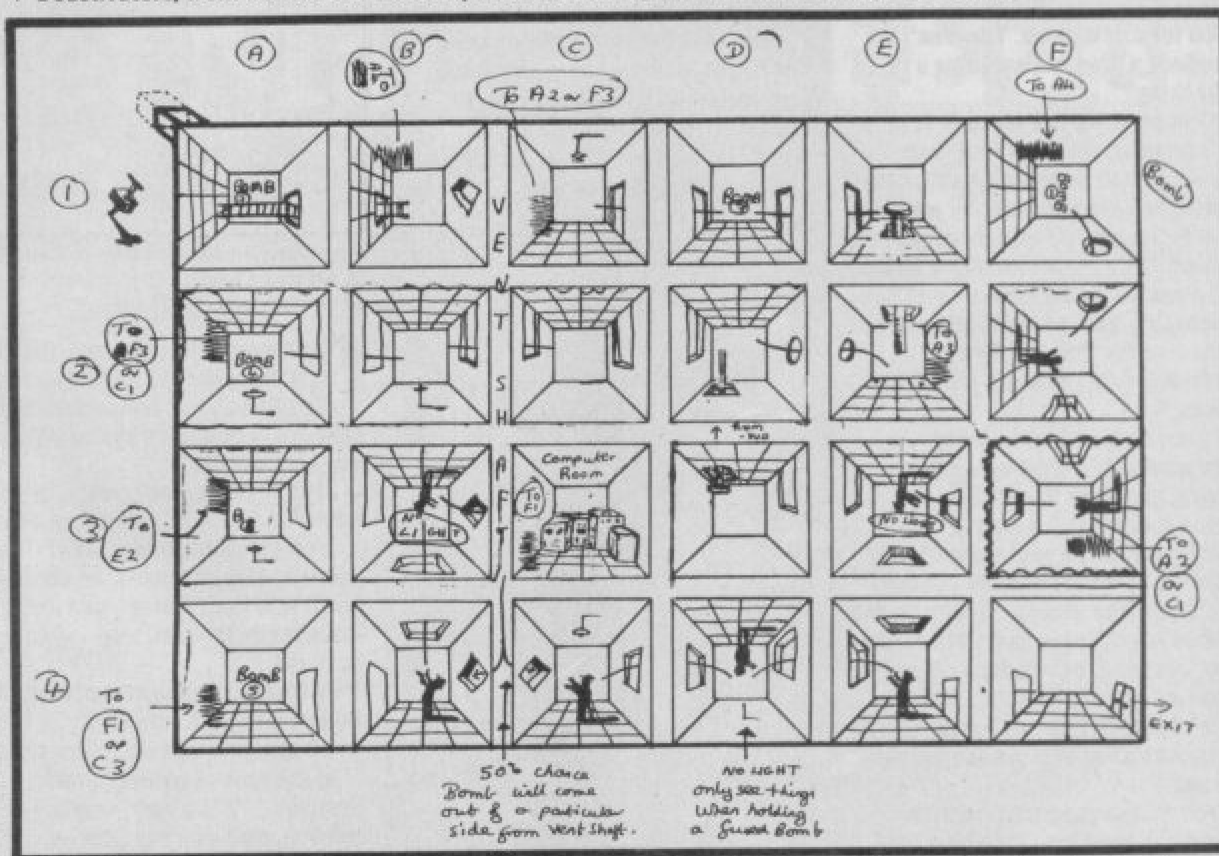
David Bishop isn't a programmer. He is a games designer, as he is at pains to point out. Along with his 'partner in crime', Chris Palmer, (who does have a bit of programming knowledge), as part of a firm called Tigress, he has worked on a number of hit titles, such as *Deactivators* and *Golf Construction Set*, both for Ariolasoft.

Bishop got involved in games design through working in the Games Centre, a now-defunct specialist board and war games store in central London.

Deactivators is a case in point. It's such a devilishly twisted idea it could only have been thought up by somone like David, who's steeped in games designs and board game scenarios. The key to producing a great finished game, David reckons, is to match the right programmers to the right game design.

Some are more capable of producing certain aspects of programming than others — whether its, graphics, or 3D scrolling or whatever."

▼ Deactivators, from Ariolasoft. The storyboard is from David and Chris via Tigress Designs



◄◄◄◄ ODE ◄◄◄◄

David Pringle — boss of *Trivial Pursuit* authors' ODE could hardly be described as having a stereotype programming background. After attaining a First at Edinburgh University, he moved to Oxford, and took up a position as a research physisist, taking a doctorate in the subject, and staying on.

He got to use mainframe computers a lot for analysis into things technical and fissionism. Here he met Gareth Blower, now the senior programmer at ODE.

None of the founder members had used a micro. The programs would have to be more tightly written, and a long time was spent familiarising themselves with the medium. Their first program was based on the classic Shakespeare play, *Macbeth*. Hence title for the company — Oxford Digital Enterprises (ODE, geddit?)

Their first 'hit' was *RMS Titanic* released in April by Electric Dreams.

Latest project is *Trivial Pursuit* for Domark.

Generally, Pringle says, there isn't much point spending more than about six months on a game unless you have a sure-fire winner on your hands. The structure for game design is very simple: one person will be assigned the duty of watching the project, and he or she will follow it through from start to finish. "This helps keep some kind of continuity."

"We always try to look for something that will set the game apart from anything that has gone before," Pringle says. "In *Titanic*, for example, we developed the wire-frame graphics, with broken lines, simulating what sort of visibility you could expect under water."

Geoff Quilley is the man responsible for producing the graphics on all of ODE's games. He began working on 8-bit machines, and then moved on to the Atari ST to do the graphics for Rainbird's *Pawn*. Now he's back with 8-bit computers again. "I think he found it tougher working with the *Trivial Pursuit* board than the *Pawn* screens."



▲ The ODE team get down to some serious triviality, and smile at the same time



▲ The original ODE team, by a bush

Although he says that it took quite a while to become recognised in the industry, Pringle says that companies are now beginning to come to them with ideas, as opposed to the other way round. "Domark approached up with the idea for *Trivial Pursuit*," he says, "after we had met them at the *PCW* show earlier in the year."

Pringle claims he's a perfectionist, but admits that all games software is a compromise. "Being from an academic background, you are used to always striving for the best but you've got to learn to meet deadlines" ■

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Reds under the bed — and in the hall

Finding truly useful purposes for computers in the home is a quest with rich rewards for those that succeed.

Chris Curry, one of the founding fathers of Acorn, has dusted off the concept of controlling the home environment and devoted considerable skill to marketing the idea — the result is a system called Red Boxes.

The idea is you use your Spectrum to control the system which switches on and off lights, other electric things and detect's burglars etc, etc.

For £130 you can purchase a neatly packaged Red Boxes Starter Kit containing three of the aforementioned Red Boxes, a concise instruction manual and a connecting lead.

Red Leader plugs straight into the mains supply and is attached to your Spectrum via the *Ear* and *Mic* sockets, while, Red One and Two are simply plugged into any power socket in the house. Read Leader sends pulses round your house wiring to talk to Red One and Two.

Red Leader contains what can be described as a minimalist microcomputer — a 6502 CPU and 6520 support chip, backed up by a 16K Eprom and 8K of static C-MOS Ram. The rest of the board holds circuitry for communicating with the Spectrum and with the other Red Boxes by transmitting signals around the power ring main of your abode.

Red One is a power relay capable of switching on and off any mains-operated device plugged into its 13 amp three-pin socket. It plugs into any mains socket, and then the appliance you want to control plugs into Red One. Red Two contains an infra-red sensor of the type used by modern burglar alarms. Heat producing objects — like humans or an inferno — trigger it whenever they move into its field of view. Both devices contain somewhat simpler circuitry to Red Leader, but include an encoding system that gives every Red Box its own encryption number.

As Red Leader is a computer in its own right, it only needs the Spectrum as a terminal, fetching key-presses and sending characters to be displayed on the screen. For this to happen, a terminal emulation program must be loaded, which is achieved rather neatly: you enter Load "" and then switch on Red Leader, which pretends that it is a cassette recorder, sending the program to your computer.

With the Spectrum acting as a 'dumb' terminal, the system is rather reminiscent of an old teletype — very slow and accompanied by an irritating noise as the Spectrum's speaker loudly echoes the conversation between the computers. Once programmed Red Leader can be left to its own devices, freeing your Spectrum for other use.

With the terminal software loaded, you get a menu-driven controlling program. An on-screen clock is provided along with the control options.

First you have to install each box by informing Red Leader of its type and code number. Boxes can be set On or Off or times entered when they are to be switched. Another option allows you to associate one box with another so that if the infra-red sensor is triggered, a lamp lights (so that burglars can see where they are going?)



▲ The starter pack: Red Leader, the control centre; Red Two, the infra-red detector; and Red One, power control

At this point I discovered that my Red Two box was not transmitting back to Red Leader although the LED mounted on it seemed to indicate that it was sensing movement: quality control rather than the transmission system seems to be to blame for this, as Red One worked perfectly.

A few extra commands allows you to *Save* and *Load* data and so forth. In this mode you can do little more than you could with a £15 time switch and a burglar alarm, but extra programming power is available if you quit the menu and use the Red Leader's own language called, predictably, Red Basic.

With 16K of Rom space available you might expect Red Basic to be more sophisticated than it is, but many of the statements and functions on offer are ideally suited to control applications: *Every* is an interrupt-driven structure that instigates actions at fixed time intervals; *When* constantly monitors the remote devices and responds accordingly. *Repeat Until* and error trapping are available, along with custom commands such as *Tell* for controlling devices. Graphics commands are also provided, but these seem rather superfluous.

I would rather have been given some editing features in order to avoid the retyping of whole lines to correct the many syntax errors which I generated — error reporting is cryptic and the need for brackets and quotes rather inconsistent.

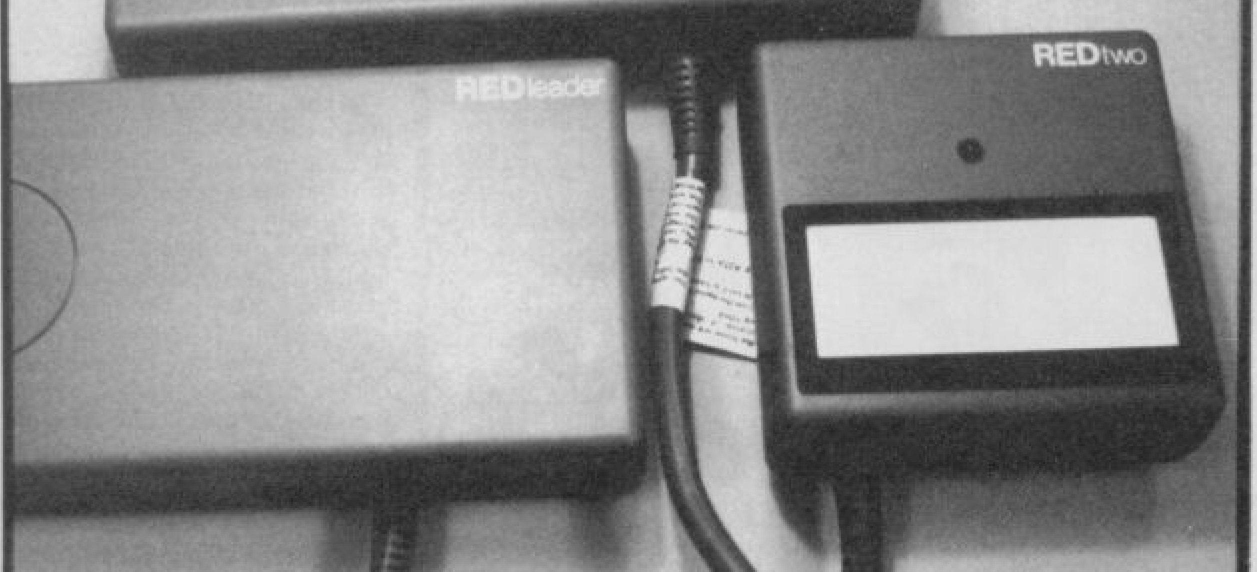
I soon had lights flashing on and off at all hours, but there is little that can be done with one relay and one non-functioning sensor.

Given more devices including such things as dimmers and temperature sensors you could set up your home to run without ever leaving your armchair, if that idea appeals to you, but taken note that each extra box will cost you £40. Equipping each room with controlled lighting, heating and electric curtains could cost a fortune.

It's all neatly engineered, though, and removes many of the problems normally associated with home control.

But I doubt if even the sharp marketing image will persuade many people that it is truly useful ■

Jeff Naylor



BUDGET £1·99 £2·99 REVIEW

THRUST

Thrust was a cult game on the Commodore and was, for a time, out at full price on that machine.

It looks, superficially, ridiculously simple. That must be the reason for the budget tag because in other respects the game is very clever, quite original and very entertaining.

Graphically **Thrust's** simple shapes and plain backgrounds remind me of the earliest arcade games — **Meteor Storm, (Asteroids)** in particular. Your ship is a wobbly triangle, you try to grab klystron pods (circles) with your tractor beam (a straight line). Getting in the way of this are limpet guns powered by a nuclear power plant (mixed circles and rectangles).

This simplicity is rather deceptive. Underneath it is a gameplay that demands real careful handling.

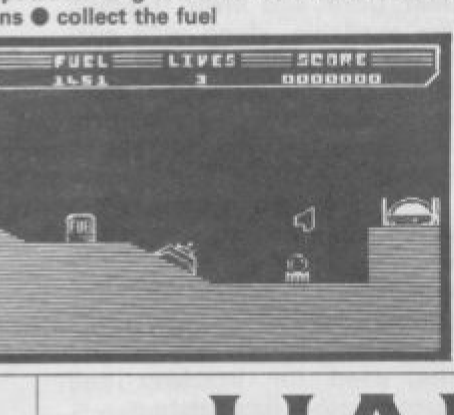
By shooting at the power station you can temporarily disable the guns; blast it too much and it explodes however. Managing to get the pod, drag it into the atmosphere and simultaneously send the reactor critical thereby blowing up the planet and escaping is good. You get big points.

The real challenge of the game however is gravity. The action of gravity on your ship and the careful way you must use your thrust control to accurately steer it is where the real skill comes in. This is particularly true of moving the ship when the pod is held in its tractor — the pod swings round chaotically as you attempt to change direction and sends you splattering into the side of the planet.

Learning how to master the effects of gravity on your ship is the art of the game. As levels move on so the planet landscape you have to negotiate to get the pod becomes ever more complex and ever more likely that you are going to end up splattered against something. Finally, in the very advanced levels you get reverse gravity which is the whole problem backwards.

Fiendish and very inventive. Don't be put off by its simplistic appearance. This is one hell of a game and at £1.99 an absolute bargain ■

In position to grabe a Pol ● Watch out for guns ● collect the fuel



FACTS BOX

Simple graphics but don't let that mislead you. This is a game for serious arcaders. Budget brilliance — don't miss it

THRUST
Label: Firebird
Author: Smith/Lowe
Price: £1.99
Memory: 48K/128K
Joystick: various

Reviewer: Graham Taylor

★★★★★

TERMINUS

Terminus is the latest game from those awfully nice people at Mastertronic. It is another in the try-and-find-something-in-the-maze-and-escape-with-it-before-your-energy-runs-out (phew!) series of games.

It's got a couple of things going for it. For a start, it is actually fun to play. In the game, written by **Glass** author Philip Hargreaves, the Chief Wangler (whatever that is!) of your colony has been captured by a horrific alien force, and taken to a huge prison complex. Being utterly bemused without their leader, the other Wanglers decide it would be a very good idea to go and rescue CW. A party of four is sent to the area with the mission of rescuing him. Will they succeed!

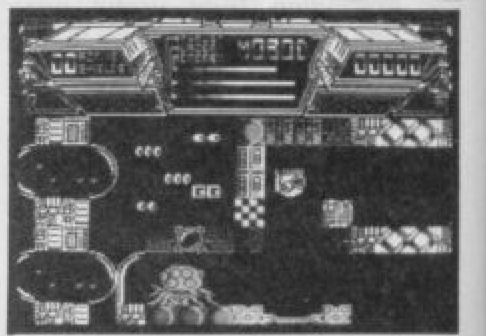
Fortunately, you can become whichever wangler you desire. Each has his/her/its own characteristics, advantages and disadvantages. The character names are predictably 'whacky': Spex, Mobod, Xann and Magno (not to be confused with Mango) are the names. Pick the one you feel less embarassed controlling, off you go into the maze.

Once you find yourself in the myriad of multi-coloured rooms, it is astoundingly easy to get utterly lost. The locations are very colourful, and there is a large amount of, er, stuff to keep your interest, long after the initial thrill has gone.

To hinder your efforts further, there are a good number of stationary monsters, who are very large, and very hazardous. These beasts are virtually indestructable. However, one's bloodlust can be partially satiated by wiping-out the waves of aliens which will descend from on-high.

Essentially your wangle-choice is determined by which part of the maze you wish to explore. If one location has a large number of lava-pits, it makes the most sense to choose a character who can either fly, or will stick to the ceiling.

Once Spike (Chief Wangle) has been rescued, well, that's anybody's guess. The maze is 512 rooms in size, and so will, as they say, 'keep even the most hardened gamer guessing to the very end.' Well, I'm sure someone says it ■



FACTS BOX

A tried and tested formula of zap, map and explore. It works wonders, though, but there are games of equal value around

TERMINUS
Label: Mastertronic
Author: Philip Hargreaves
Price: £2.99
Joystick: various
Memory: 48K/128K

Reviewer: Jim Douglas

★★★★☆

HAPPIEST DAYS OF OUR LIVES

The Happiest Days of Your Life is another conveyor belt Firebird title put out presumably on the scatter gun marketing technique which can be roughly translated as 'surely one of these things will sell if we put enough out there'.

It's not easy to get much idea of the game from the outside box: 'clear your name to avoid a thorough caning' and 'screen pictures shown may be different machine versions of game' is all you get. The former doesn't make it sound very exciting (except to masochists who may try to lose). As to the pictures, I can say that they are exactly like the Spectrum version of the game.

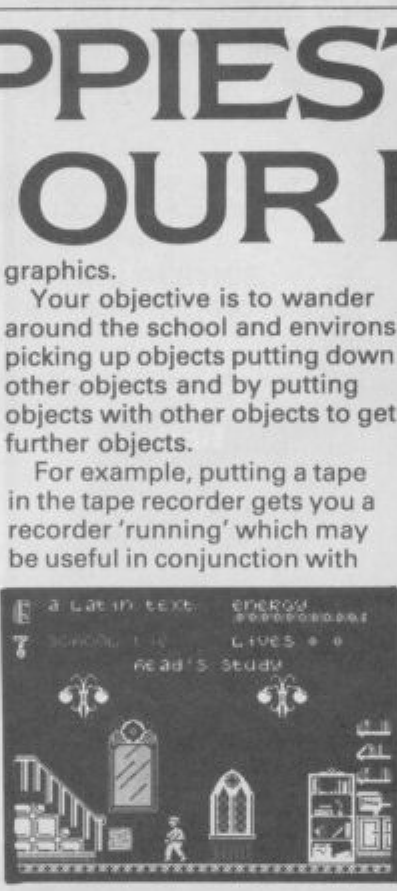
It's a sort of **Skool Daze** minus originality meets **Wally** games with marginally inferior graphics.

Your objective is to wander around the school and environs picking up objects putting down other objects and by putting objects with other objects to get further objects.

For example, putting a tape in the tape recorder gets you a recorder 'running' which may be useful in conjunction with the computer.

There are things spinning around, things bouncing up and down, things wizzing from side to side — all of them sapping your energy. Some places seem to restore energy levels and most of the puzzles require logical association of objects ie taking the betting slip to the betting shop sounds a good idea. . .

Graphics are fair, quite big, quite chunky though with a sublime disregard for attribute problems that not even Mikro-Gen could equal. It isn't badly programmed but there really isn't anything exciting about it. On the other hand it is a budget title. If you absolutely must have another **Wally** style, collect-the-bits game I've seen worse and this is cheap ■



FACTS BOX

Wally meets Skool Daze, reasonably proficient jumpy runny collecty thing. Cheap but, overall, little originality in evidence

HAPPIEST DAYS OF YOUR LIFE
Label: Firebird
Author: Martin Sherlock
Price: £1.99
Memory: 48K/128K
Joystick: various

Reviewer: Graham Taylor

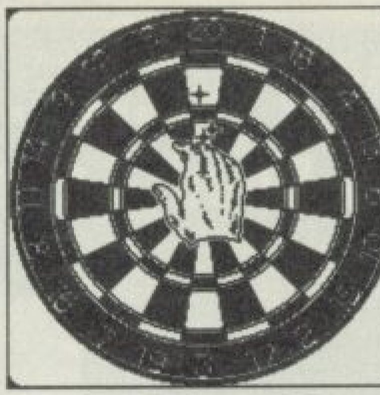
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BUDGET £1·99 £2·99 REVIEW

180



180 is a darts game from Mastertronic. Now that may seem like a pretty banal and dull statement but it isn't.

It has every trimming you could want from a darts game, including excellent graphics and digitised speech. Yes, your Spectrum will screetch 'onchhh Kuchchdrechhh anchd eighchchchyeeee' should you score it. You also get what appears to be a multi-channel Rob Hubbard-type soundtrack consisting of a sort of *Depeche Mode* play the hits of *Chas and Dave* sing-alonga-bleep. I liked it but others in the office threatened violence unless it was turned off immediately.

The game is played strictly according to the rules of 501 as played by those fat people on the TV. The actual dart-aiming bit is rather clever — the dartboard fills the screen, over it is a hand, holding a dart, which sways back and forth as though aiming carefully. You try to steer the hand into the right position and release the dart at the right time. This is made difficult by the fact that a) the hand can only move along diagonals and b) it never stops moving.

There are opponents, whose playing skills increase as you move from quarter- to semi-final to final. The idea of opponents seems a bit bizarre, I mean the only way the computer can fail is to to metaphorically kick itself in the shins and obviously this is what happens. Some sort of randomise function determines when the opponent will fail to hit his intended target.

Not one but eight extremely bizarre darts players take you on. In the section of the game where they play you see a sort of 'corner of the pub' view which takes in a barmaid and anonomous persons sitting at the bar and an occasional dog. The occasional dog only appears on some occasions and occasionally urinates against the bar. It's occasionally funny.

The actual players who have names like Mega Mick, Belly Bill, Devious Dave and Tactical Tel appear to all wear the same unpleasant clothes — a lumberjack shirt and light cotton trousers with sneakers.

Great game, excellent graphics, lots of fun touches, a real challenge but it's darts.

Buy it and play it in secret ■

FACTS BOX

Darts ought to be boring and tedious, but with 180 it has been made funny, exciting and very impressive, a closet hit

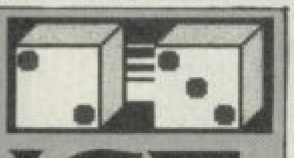
180
Label: Mastertronic
Author: Binary Design
Price: £2.99
Joystick: various
Memory: 48K/128K

Reviewer: Graham Taylor

★★★★★



MIAMI DICE



The first thing to make clear is this game has nothing to do with Crockett and Tubbs, those two Miami Cops. It has even less to do with a spoof on Ocean's game **Miami Vice**. What it is to do with is American Craps (some people might say that *is* Miami Vice — however I wouldn't care to pass judgement on that).

Miami Dice turns out to be a pretty nifty simulation of the American dice game Craps. Craps has simple rules and terribly complicated betting. What you have are two dice and green baize table with high sides. Dice are thrown against the sides and bets are taken as to the numbers thrown up.

If the dice come up 7 or 11 it's an automatic win. If they say 2, 3 or 12 it's a loss (called Craps). Any other combination and the player has to try and roll that combination again before a 7 comes up in order to win. That's it in a nutshell. The complicated part is the betting, because there are literally dozens of different types of bets relating to the various odds on each combination of numbers. Fortunately, in the program sleeve everything is set out in an easy to read format.

You select four out of a possible eight gamblers with such notable names as 'High Risk Ron'. It's as well there's an *Edit* function to put in your own names if you want (Steady Eddie is a particular favourite of mine).

Each player begins the night's gambling with $100, so once you're set up correctly and you've chosen your shooter, it's away to the table to try your luck. There is some pretty good speech synthesis in this game, along with very slick and colourful graphics — in fact the whole game is a very professional production.

My only criticism of **Miami Dice** is the speed. The program doesn't allow enough time for you to make your bets — it all has to be done in quick, quick fashion.

I also reckon games of this kind have a limited appeal because the real tension in gambling is having to use your own hard-earned pie and mash. Having money handed to your to play with doesn't quite taste like the real thing ■



FACTS BOX

Cheap and cheerful Worth it even if the challenge is more in its race against time than in the adventure puzzles

MIAMI DICE
Label: Bug-Byte
Price: £1.99
Memory: 48/128K
Joystick: various

Reviewer: Andy Moss

★★★★☆

MORONS

Morons is a budget adventure game well worth the few pence it costs. This isn't to say it's a great game — it's not — but it is good value for money.

The plot, as you would expect, it's all pretty moronic. A race of space-going idiots have secreted the Three Pillars of Time — Past, Present and Future (naturally) — in their spaceship, which is now in a parking orbit around Earth. Being not overly endowed with the old grey matter, they've managed to forget where they have been hidden.

Your job, and you have chosen to accept it, is to find the Three Pillars of Time, and return to Earth.

It's not as easy as it might sound, though. You only have limited oxygen for your space suit, and batteries for your torch. Spare tanks and batteries are located at various points throughout the ship, but if you run out of either, tough.

What's more, the crew of the good ship whatever-it's-called have filled it with a collection of pets. If you're not careful, said pets will enjoy having you for dinner.

Plus, of course, there are various puzzles and challenges spread liberally throughout the ship. These need to be solved or avoided.

Moron has no pretensions. It's a straightforward adventure with reasonable but not stunning graphics. The puzzles seem to be fairly tough, but we're not talking Infocom or Level 9 here. If you can accept the slight oddball mixture of science fiction, fantasy and the commonplace, then you should have a good time ■

FACTS BOX

Cheap and cheerful. Worth it even if the challenge is more in its race against time than in the adventure puzzles

MORONS
Label: Atlantis
Author:
Price: £1.99
Memory: 48K/128K

Reviewer: Gary Rook

★★★★☆

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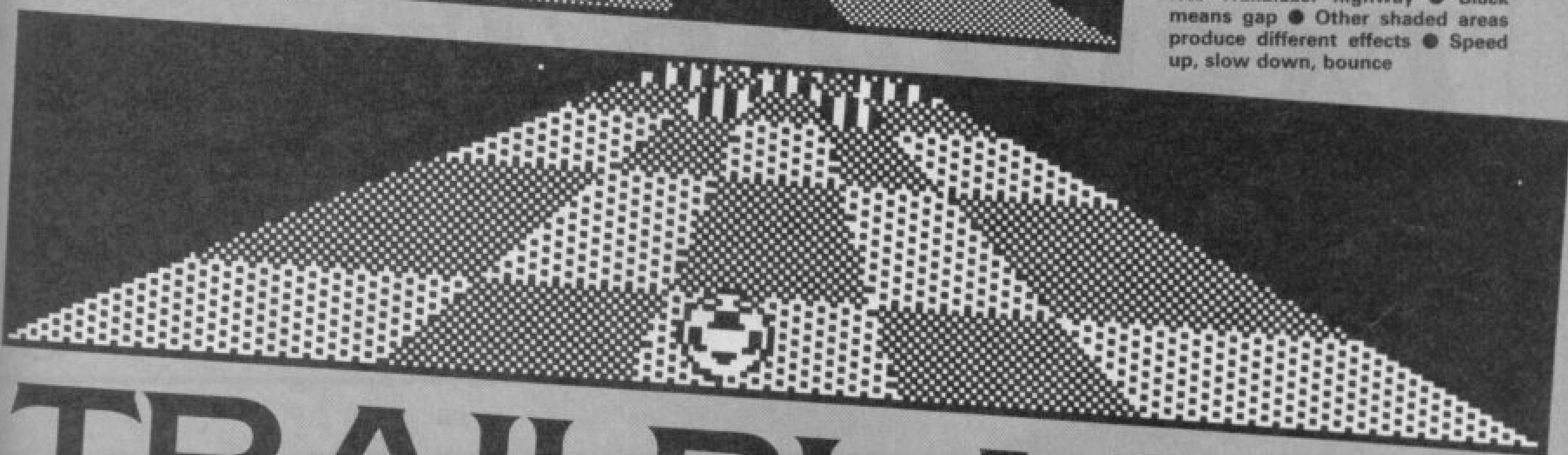
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ARCADE REVIEW







◀ Sections from the seemingly endless Trailblazer highway ● Black means gap ● Other shaded areas produce different effects ● Speed up, slow down, bounce

TRAILBLAZER

Trailblazer is something special. Visually it reminds me of nothing so much as the 'Beyond the Infinite' section of 2001 where Bowman hurtles through about ten minutes of very cosmic special effects.

As a game it's, well — addictive is too poor a word. How about dehabilitating, all consuming or brain blitzing?

There isn't too much to say about it though. The game idea is so very, very simple. It can be reduced to the following: control a ball rolling and bouncing over an abstract, geometric and flat landscape which hurtles towards you from the middle horizon. Don't fall down any holes, don't waste time. That's it.

OK, so that isn't quite it. The landscape is a patchwork of differently shaded squares and rectangles. Different kinds of shading indicate different properties. Over lines parallel to your direction of movement you'll spped up. Perpendicular lines slow you down. An unshaded area will make your ball bounce. This can be vital to cross giant chasms in the scrolling landscape. Utterly unwelcome is the dot/dash matrix that indicates that all the controls are reversed, ie left moves you right and vice versa.

The ball may move from a speed-up zone, to slow-down to reverse controls to bounce pad in seconds and you'd better be ready.

The playing area is divided into various zones. Early zones are comparatively easy, later zones just one infuriating step away from being impossible. The knowledge that it can be done, but you can't do it wrenches deep in the guts.

Different zones seem to concentrate on particular kinds of problem. Zone A is an easy mixture of the different elements. By the time you get to Zone D you start getting alternate strands of track where you must hit the bounce pad at the end to bounce over to the next track.

Part of the art of playing the game is familiarity — just knowing what's coming up where — but in the end it goes so fast that reactions and instinct take over. You think in your hands not your head.

If it all sounds a bit too daunting then take heart. Gremlin has introduced features which make the game accessible to the novice. There is a practice option which allows you to learn each section and get used to the effects of particular sequences of grids. There is no time limit, which takes the pressure off a bit, but you still keep hurtling into empty space time after time . . .

The graphics are extremely well done, although, inevitably there isn't really all that much to say about them. The ball seems cheekily reminsent of the famous Amiga one and spins in a similar manner. The abstract patchword of grids scrolls incredibly smoothly and at an astonishing speed — it's all two-colour of course but in a game which is not intended to look like anything from the real world it hardly matters.

It's a pity the game lacks a two-player options found on versions on other computers — processing time was the problem, apparently, but really, I haven't played a game so obsessively for ages ■

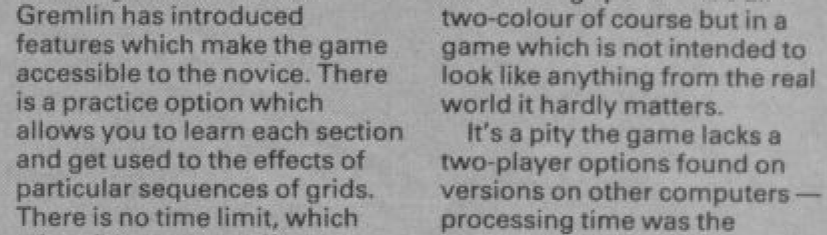
FACTS BOX

The ultimate test of your reactions. Visually astonishing reaction game utterly, utterly, utterly addictive

★★★★★

TRAILBLAZER
Label: Gremlin
Author: in-house
Price: £7.95
Joystick: various
Memory: 48K/128K
Reviewer: Graham Taylor

On Level B (which seemed clever at the time) ● Four jumps left and not much time ● Which strand across empty space will you choose? ▼



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TASMAN PRINTER
INTERFACE

TASPRINT PRINTER INTERFACE for the ZX Spectrum £29.90
RS232 Cable for ZX Interface 1 £14.50

Plug into your Spectrum and drive any printer fitted with the Centronics standard parallel interface. Supplied complete with ribbon cable and driving software. The user changeable interface software makes it easy to send control codes to your printer using the method so successfully pioneered with TASWORD TWO. The cassette contains fast machine code high resolution full width SCREEN COPY SOFTWARE for Epson, Mannesmann Tally, Shinwa, Star, Tandy Colour Graphic (in colour!) printers. TASCOPY shaded screen copy software for this interface (value £9.90) is INCLUDED in this package.

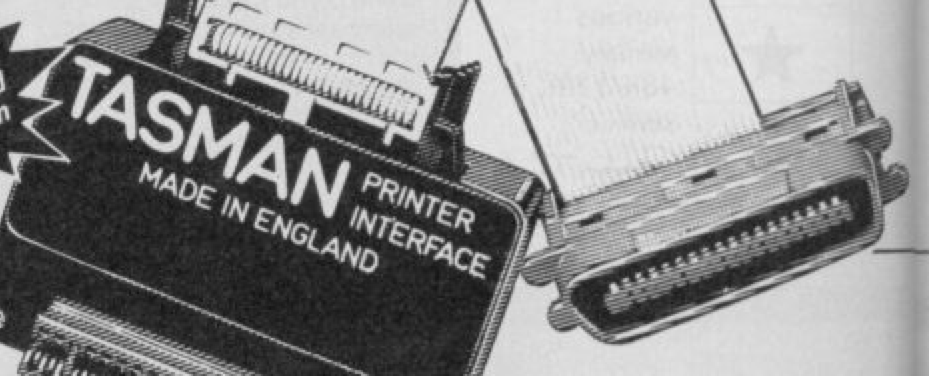
The TASCOPIES and TASPRINTS drive all Epson compatible eight pin dot-matrix printers e.g.

		BROTHER M1009
AMSTRAD DMP2000	NEC PC 8023B-N	BROTHER HR5
EPSON FX-80	MANNESMANN TALLY MT-80	SHINWA CP-80
EPSON RX-80	STAR DMP501/515/5610	DATAC PANTHER
EPSON MX-80 TYPE III	COSMOS-80	DATAC PANTHER II

COMPACTA - bold and heavy, good for emphasis
DATA-RUN - A FUTURISTIC SCRIPT
LECTURA LIGHT - clean and pleasing to read
MEDIAN - a serious business-like script
PALACE SCRIPT - a distinctive flowing font

TASPRINT output shown at less than half-size.

Compatible with Spectrum, Spectrum+, and 128K Spectrum



ARCADE REVIEW

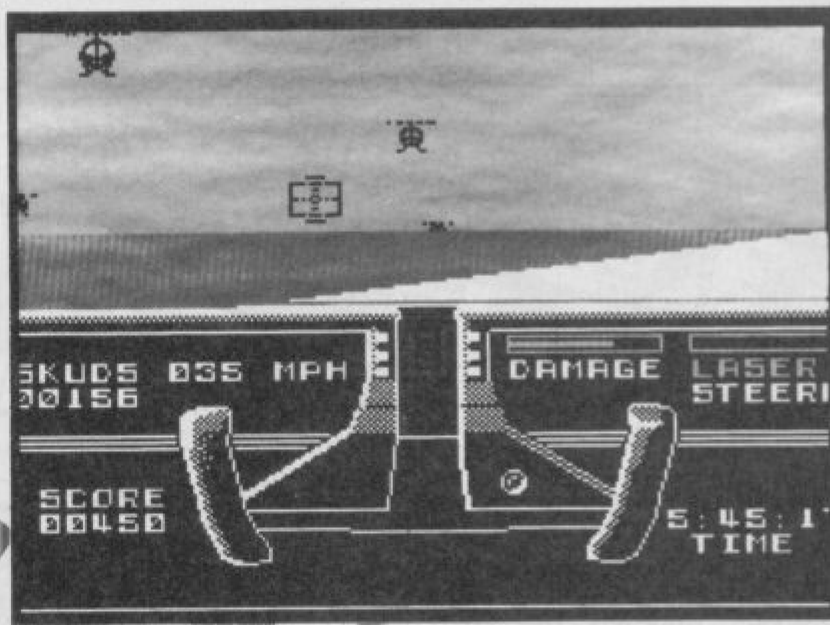


HINTS AND TIPS

● Always wait and see what K.I.T.T. has to say, and then move quickly, as the clock continues to tick, no matter what you are doing

● While on the race screen, put the car in control of the lasers, and drive the thing yourself. Put the speed up to 240mph, as it's still possible to control the car at this rate

● In the operational bases, wait and see what the guards do, and then rush past them, using your knowledge of their movement patterns



KNIGHT RIDER

In the latest in a line of irritatingly mediocre TV licencing deals from Ocean, you take the role of Michael Knight, owner of the astounding K.I.T.T. car in his fight against injustice across America.

Knight Rider has a strong strategy element, as you will discover as soon as the instructions appear on the screen. First choose your mission, ranging from 'Democratic Convention' to 'Presidential Dinner'. All of the plots are really very similar, involving lots of racing around in K.I.T.T. and very little else.

Once the plot's been chosen, you can get on with the game. There are three diffrent screen layouts, which appear depending on which part of the game you are currently playing — the map, driving and operation base screens.

The Map Screen is very straightforward. The upper portion of the screen depicts a map of the country, and all the interconnecting freeways which are available for K.I.T.T. to travel along. You program your destination in the computer and begin your journey. If there is a building nearby, you an enter it and have a look around. The Map also gives you an idea of how tough your journey is likely to be, as the larger curves in the road are shown in detail.

Next up is the 3D driving screen (whoopee!) which is really the main part of the game. Here, you guide your car along the freeway towards the destination of your choice. It all looks very similar to **Zzoom**, the Imagine oldie of a few years back, in which you had to shoot down some thoroughly unconvincing objects in semi-3D.

In **Knight Rider**, though, the foes are a little more menacing. Helicopters loom up out of the desert with frightening regularity weaving their way left and right in front of you. They fire rockets at K.I.T.T. for which there is no logical explanation that I can think of. But they seem to know what they are doing, so who am I to argue. . .? It's all just like the TV series really.

Now, as anyone who has tried it will indubitably testify, trying to steer a doctored Toyota Supra at 240 mph while picking off murderous helicopters is no mean feat.

FACTS BOX

Easily as amazingly mediocre as the TV series from which it's taken but it doesn't qualify for so-bad-it's-good

KNIGHT RIDER
Label: Ocean
Price: £7.95
Memory: 48K/128K
Joystick: various

Reviewer: Jim Douglas

★★★★☆

Luckily, you are in the possession of such an amazingly talented motor (John) that you can simply hand over one of these operations to K.I.T.T.

The graphics at this stage aren't very impressive, consisting of a wide yellow road with an occasional black line shooting down the middle, and the aforementioned helicopters doing their level best to look menacing on the horizon.

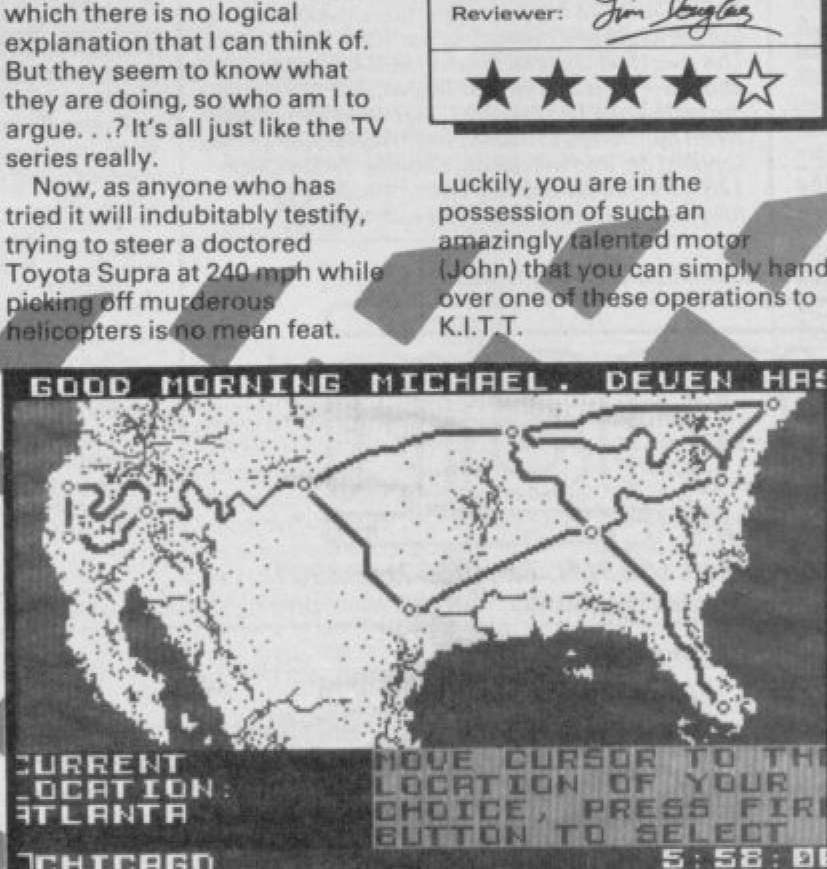
Other information on screen tells you how fast you are going, the time left before something ghastly happens, how much damage you have sustained, your laser temperature and skuds. A skud is the rather unfortunate name given to the units of distance left before you reach your target (Standard Kitt Unit of Distance. Geddit?)

Should you manage to get to your destination before your time runs out and something ghastly happens, you go back to the map screen. You either begin another journey — often you will not be able to drive directly to the desired location — or enter a building and have a look around inside.

Should you choose the latter, the screen will change for the final time, and the operation base will be depicted in plan form. The aim of this part — as K.I.T.T. will inform you by means of an incomprehensibly irritating scrolling message — is to reach the room on the other side of the building.

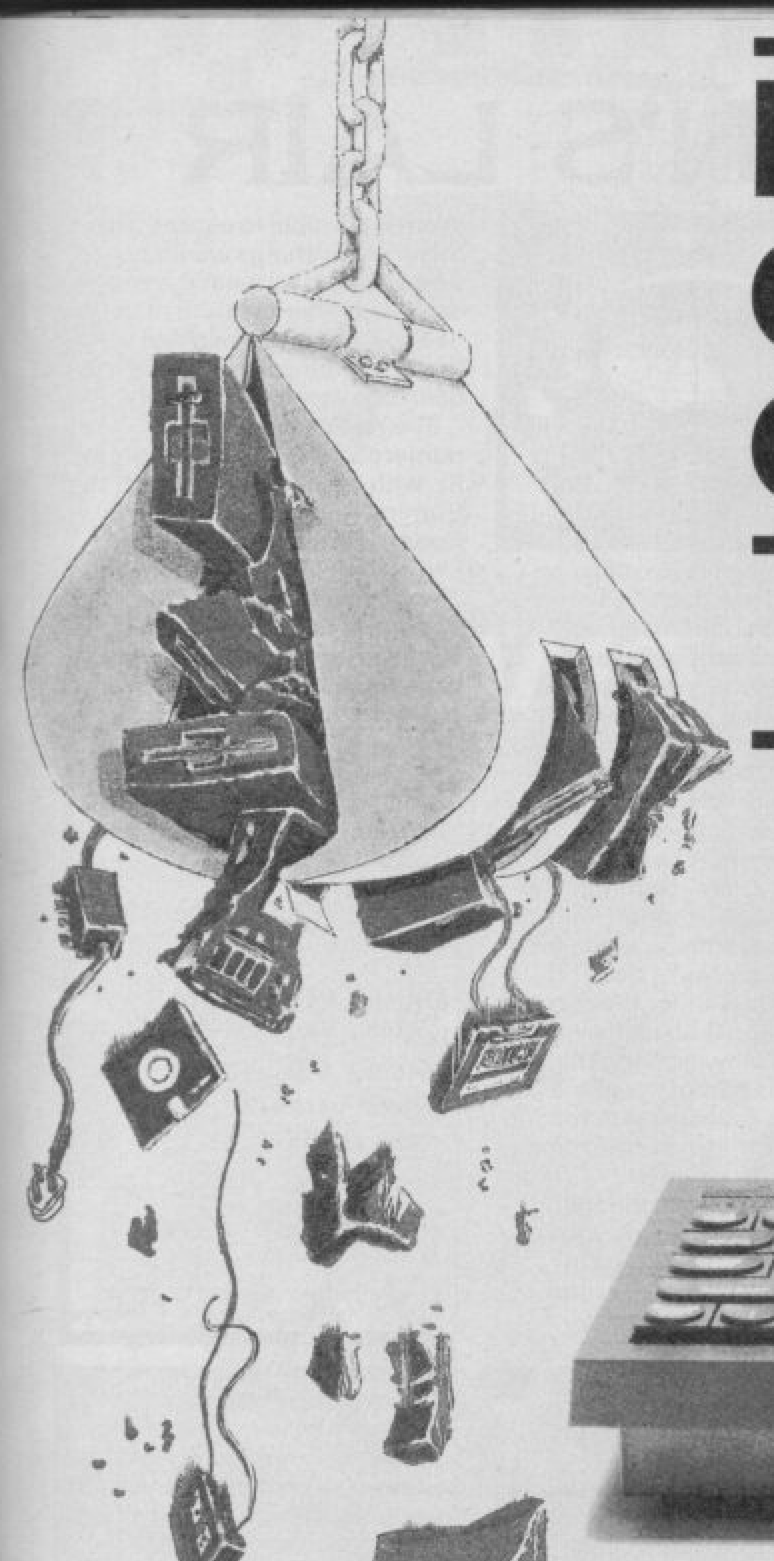
Walk past guards and packing cases, both of which seem to have a similar IQ. Once you reach the room, there is a delivery note, or a packing slip. This is your clue as to where your next location lies.

So, it's back into the car and off on another road-race to the next city. And the whole thing starts over. It's not all that inspiring is it? ■



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ARCADE REVIEW

DRAGON'S LAIR

Dragon's Lair was always going to be an impossible conversion to do. The original coin-op was the first ever laser-disc arcade game with fabulous real cartoon graphics and very peculiar gameplay.

Software Projects has managed to get the gameplay right. . . Nuff said.

Loading the program is a pain because it's a multi-load thing. The structure is as follows: on one side of the tape is the main program. On the other side are the various modules which make up the screens. There are nine parts of the game, and you must return to the beginning every time you lose all your lives. It drove me scatty.

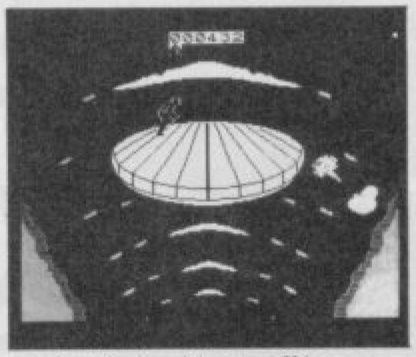


The game itself, like its coin-op original, has limited interaction for a lot of the time. You only have to make keyboard or joystick moves at crucial moments. The rest of the time the action carries on regardless.

Now, while all this is very well in the arcades, it doesn't work quite as well on the Spectrum. In the arcade you could stand back and be amazed at the cartoon graphics which glided across the screen with amazing precision etc, etc. On the Spectrum, you can't. The graphics simply aren't up to it.

The first section is called 'The Falling Disk'. It involves Dirk and a falling disc. As the dragon lives deep underground, you must find some way to get down to him. A suitably precarious route is offered by a large wooden disc which hovvers in the middle of a very deep shaft.

A couple of metres down the shaft, though, and everything turns sour for Dirk. An Air Genie, which wafts up the shaft and blows you all over the disc. As the disc descends, you fight



against being blown off by an increasing number of Genies. This part is so unimaginably difficult, I cannot believe anyone but the most resolute player solving it.

Complete this part and the way is left clear for Stage 2.

Lucky Dirk now works his way along a very dangerous hallway, in order to get closer to the dragon's lair. Nothing is as easy as it looks, though, and he's unpleasantly assaulted by numerous pieces of dead people. You wait for the correct moment, and then let fly with a sweeping blow, striking the skulls. This part of the game is very inadequate indeed, forcing you to jerk the joystick around — often with no effect.

You will die with unnerving regularity, which leads you through to a sub-routine in which you are split into little pieces, and then reformed.

Were it possible to escape from this routine, things would not be as bad. Unfortunately, you can't, and after the third man has been lost, you begin to wish that something more useful had been done with the memory.

The rest of the game is numerous screens of the same ilk, with exciting names such as Burning Ropes, The Weapons Room, Ramps and Giddy Goons, The Tentacle Room and The Deadly Checkerboard.

It all sounds pretty stunning but I'd already been stunned once too often ■

FACTS BOX

A big disappointment, having neither stunning graphics or exciting gameplay. . . And the multi-loads are a pain

DRAGON'S LAIR
Label: Software Projects
Price: £7.95
Joystick: various
Memory: 48K/128K

Reviewer: Jim Douglas

★★★☆☆

ICE TEMPLE

Nick Razor, intergalactic cleansing operative and trainee mega-hero, has had his new motor nicked.

He'd parked it outside the newsagent, gone inside for a packet of universal bubble busters, and when he came out it was gone. Following his hyperactive intelligence led him to a remote planet where his motor has been hidden in the local ice temple. While he's looking for it he discovers that the temple is a cover for a thermionic reactor, being used by aliens to draw energy from the planet's core and assemble an invasion fleet.

Earth is the target and Nick is the only saviour available. He must find the eight pieces of the reactor and chuck them down the disposal chute.

You've got aliens to blast, mines to avoid and energy levels to sustain during this game in which Bubble Bus makes Ultimate's **Underwurlde**-style graphics its own.

The alien forces comprise gibbering robots, colourful gyrating hamburgers, and rockers which appear to be wearing mini skirts.

Most aliens can be zapped with your fire gun, but find your ship quickly: your body suit is not shielded and the ship, which you'll find one location down and one across from your start position, is more durable than flesh.

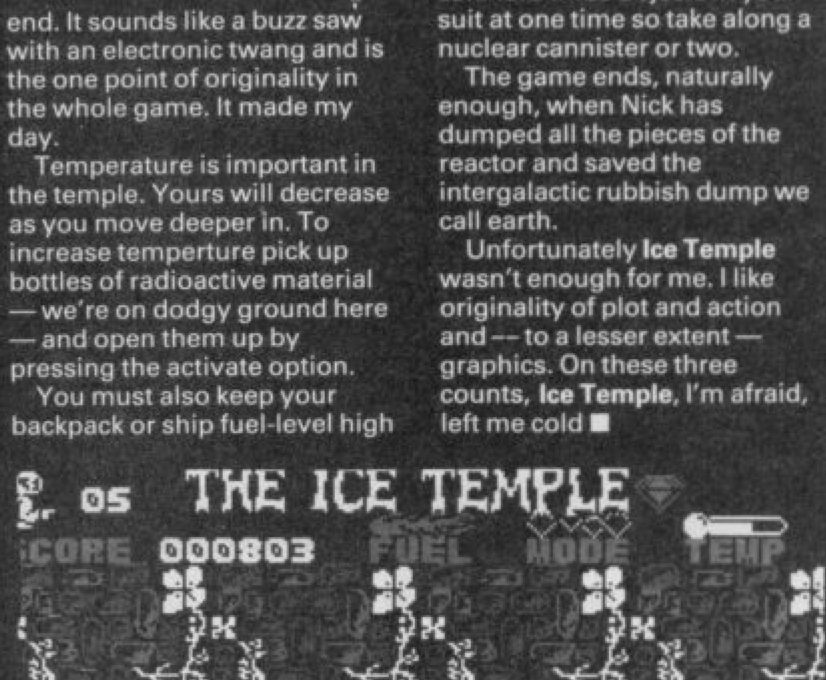
The temple contains a massive 800 locations but you can zip around them using the teleport gates.If you've got a 128 machine, or perhaps a 128K+2, the teleport sound effect will annoy your friends no end. It sounds like a buzz saw with an electronic twang and is the one point of originality in the whole game. It made my day.

Temperature is important in the temple. Yours will decrease as you move deeper in. To increase temperture pick up bottles of radioactive material — we're on dodgy ground here — and open them up by pressing the activate option.

You must also keep your backpack or ship fuel-level high and your flame gun at full power by finding cases of energy and power crystals. You can hold three objects in your suit at one time so take along a nuclear cannister or two.

The game ends, naturally enough, when Nick has dumped all the pieces of the reactor and saved the intergalactic rubbish dump we call earth.

Unfortunately **Ice Temple** wasn't enough for me. I like originality of plot and action and — to a lesser extent — graphics. On these three counts, **Ice Temple**, I'm afraid, left me cold ■



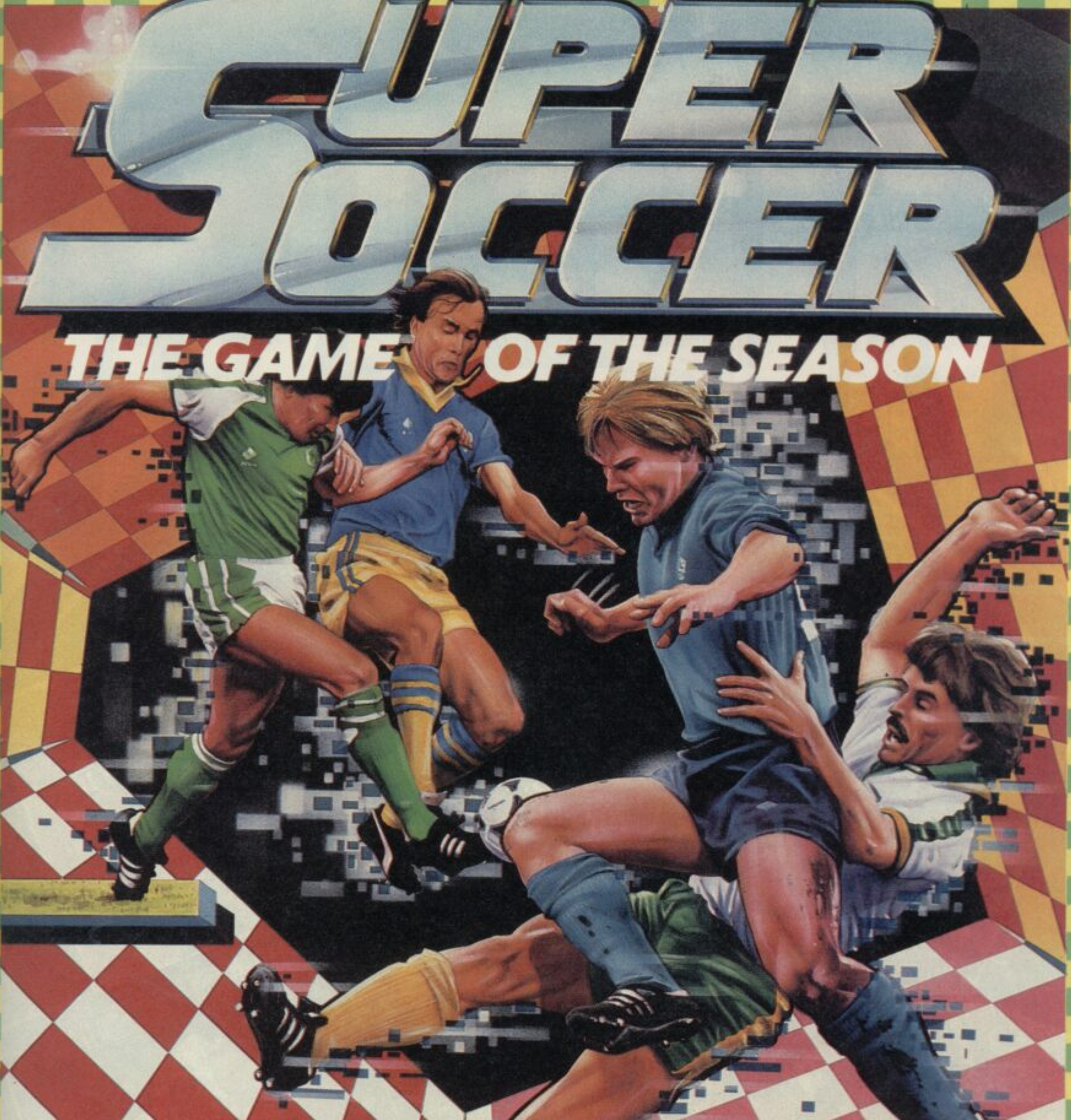
FACTS BOX

Bubble Bus plays follow-the-Ultimate leader. It's all neatly done but you won't find two original ideas to rub together

ICE TEMPLE
Label: Bubble Bus
Price: £7.95
Joystick: various
Memory: 48K/128K

Reviewer: John Gilbert

★★★☆☆



We think Super Soccer is the best computer soccer simulator yet. Be Maradona on screen.

You can dribble past opponents, slide tackle, make crosses, even attempt diving headers. But what makes this game outstanding in its own field is the control you can exercise over the ball. No other game allows you to control the strength of your sharp shooting and ball passing like Super Soccer does.

What's more, when taking free kicks you can organise the whole team with the "full team positional play" feature.

This is a 1 or 2 player game and there's an optional extra which allows up to 8 separate players to participate in a tournament competition.

So get on the ball in the game of the season.

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STRATEGY SIMULATION REVIEW

NAPOLEON AT WAR

Napoleon at War — Eylau is the latest in a long line of interesting wargames from CCS.

The company's last two **Arnhem** and **Desert Rats** — are two of the best strategy games that I've ever seen on the Spectrum, so I approached this one with high hopes.

After playing it a couple of times through, my feelings towards the game are a trifle ambiviolent. It's enjoyable. It plays very well. But it's very complex — perhaps too complex.

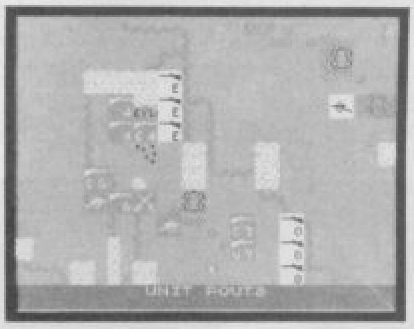
You are Napoleon. So far so good. Now defeat the combined Russian and Prussian forces facing you across a landscape of streams, woods and frozen lakes. Your forces are concentrated about the village of Eylau, from which the battle takes it's name.

You command infantry, cavalry and artillery forcess, and the enemy has the same types of troops at their disposal, but seem to outnumber you somewhat. The map is divided into squares showing terrain features. Type of terrain effects your troop movement: woods, frozen lakes, buildings etc slow them down. Cavalry move faster than infantry, which move faster than artillery. Atrillery, however, can fire at the enemy, while the other arms have to move next to an enemy unit to attack it.

Your troops are divided into corps. In game terms, what this means is that they can be given orders as corps, or as separate units. Each corps is composed of three units, and usually it is marked with a corps number.

Give a corps an order and all the units in that corps will try to carry those instructions out. If you wish you can detach units from the command of a corps and give them separate orders though.

Ordering troops about is a bit of a puzzle at first. Basically, you page through a set of menus and choose what instructions a corps or unit has from these. Tell a corps to move to a certain place. Or tell it to attack the



enemy, to hold a position or to regroup. You can only tell a unit, it seems to move somewhere.

Attillery are different, and have their own menu. Cannon can move, or they can fire. If they fire, you have to specify whether they are to fire against infantry or artillery. They have a range of five squares, and cannot fire over any of your other units.

To tactics. Effectively, you have to try to hold on to the centre and defend Eylau, while your right flank destroys the forces facing it and then rolls up the enemy. You also have a corps under Ney, which enters on Game Turn 3 and acts as your left flank.

At the beginning you can see where the Russian and Prussian forces are — this information comes from intelligence reports. As they move, however, they have a habit of disappearing. You only get shown where they are if one of your corps commanders tells you. This is an important point to remember — your troops will react to units which are not on the game board as far as you can see. Enemy forces may not be shown on the map, even if they fire on your troops, or engage in melée against them. I lost two artillery units in one game which ran away from Russians I couldn't see!

Artillery, in fact, can be very vunerable, and you'll probably lose a lot of guns before you work out how best to protect them.

One way, as far as I can see, is to arrange units in a sort of draughts formation with the artilery stepped back and a couple of units of infantry in front and to each side.

When you first start playing, don't try any fancy work — I did and I got wiped out. Just sit back, hold on to Eylau, and watch what the enemy does.

Napoleon is certainly a challenging game, but I found some of the mechanics a little tedious. I couldn't help feeling also that a bit more thought at the design stage could have ironed most of them out. The cursor, for example, has a habit of disappearing when it moves on to a square containing either a terrain marker or a unit, so it's easy to forget where it is. Another problem is that units sometimes do some very odd things when they are trying to obey a corps order — including performing a little dance around their headquraters unit. It appears to be because they always try to get into the position relative to the headquarters unit which they held at the beginning of the game, so a unit which started to the right of its HQ will always try to be on the right.

These few mechanical problems mar for me what is otherwise an excellent, one-player wargame.

Even with them, I think it's well worth buying if you like strategy games.

If you haven't played this sort of game before, but are looking for a good one to try out, though, I'd advise you started somewhere else and worked up to this one ■

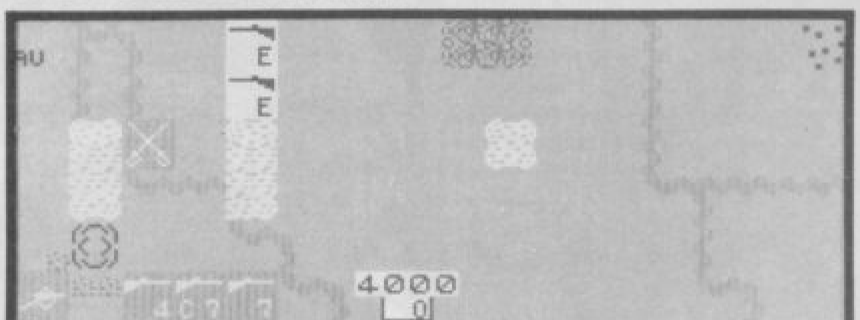
FACTS BOX

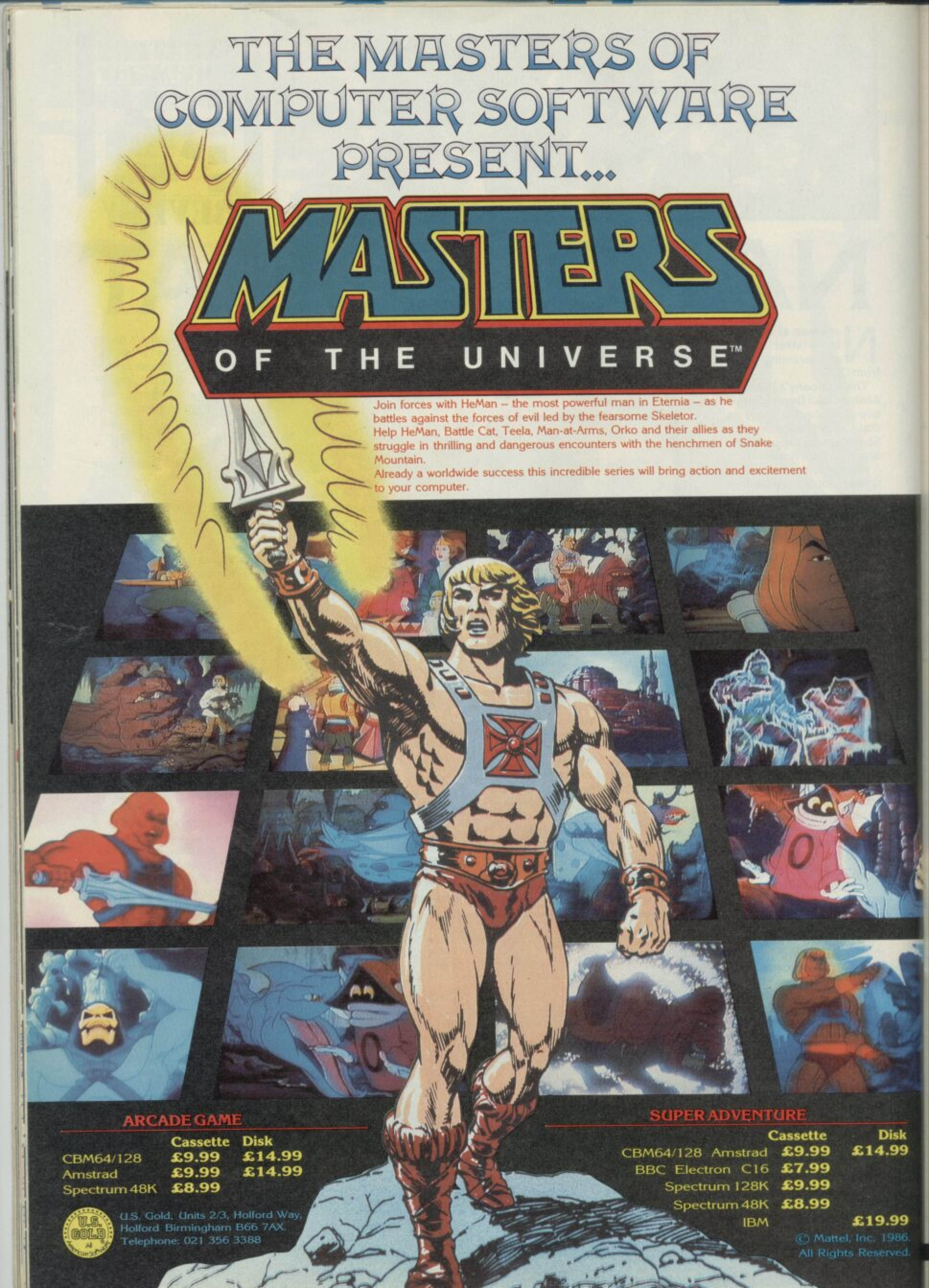
Challenging war game with some unfortunate mechanical flaws. Good for the dedicated wargamer but not for the beginner

☆★★★★

NAPOLEON AT WAR — EYLAU

Label: CCS
Author: K Wright
Price: £8.95
Memory: 48K/128K
Reviewer: Gary Rook




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GORDO'S HELPLINE

If you use the **Quill** system or **Graphic Adventure Creator** to write your own adventures you may well have some sympathy for Marc Morris who's been beating his head against a brick wall trying to sell his game: Using the **Quill** I wrote a program called **Norman in The Horrible Hotel**. The problem is you just can't convince people to buy an amateur game. Got any suggestions?''

There's no easy answer to this — and a lot of people write to me in roughly the same boat. Most commercial software companies now look for increased sophistication in the games they market and, unless you manage to produce another **Boggit** or **Very Big Cave** — both written with the **Quill** — you're unlikely to get their support or interest. Adventures just don't sell like arcade games and you'll only succeed if you can churn out a hit that's likely to develop a cult-following.

First try sending your game off to a few magazines for review. You may never see its name in print — but if it's good enough there's a chance. You'll also really have to do some sort of advertising, even if it's only in the cheapo classified sections of mags like this. You can also share your experience with others in a similar position by getting hold of copies of fanzines like *Adventure Contract*. I've mentioned this organisation before as they also run a helpline'zine. Pat Winstanley runs the outfit which aims to help writers share ideas and to offer constructive criticism, advice help and instruction. As well as offering help in coding adventures *Adventure Contact* will also help with marketing difficulties which confront individuals and small companies.

Sounds a good idea to me. If you're interested send off your gleaming £1 coin for the latest issue. *Adventure Contact* can be found at 13 Hollington Way, Wigan WN3 6LS.

So to business, in search of

Jewels of Darkness

Korah Swiftaim, who usually sends in large amounts of help on Level 9 games, pleads:

"I've reached the end game of **Colosal Adventure** and have blown up a cave full of dwarves. Alas, the explosion causes a perilous flood which always drowns me. I've mapped a maze to the west but I can't find an exit there. Tell me how to avoid the flood and also how to escape the orcs in front of the barrow in **Adventure Quest**.''

Right then. First the flood. The end game starts in a vast cave with a gang of sleeping dwarves in the NE corner. Take your dynamite and drop it by them. Now retreat to the SW corner and 5,12. The dwarves are killed and a gap should open to the W. Be careful not to make any noise before this as the dwarves will wake.

The dynamite triggers off the flood which will fill one room every two turns and, when it reaches a lava chasm, will cause yet another explosion which will finish you off unless the water already has. To escape these dooms head W along the corridor off the big cave. You should discover a ladder at the end of the corridor — this leads up into the passage network, a maze. Now go 8,25 to reach an E/W passage.

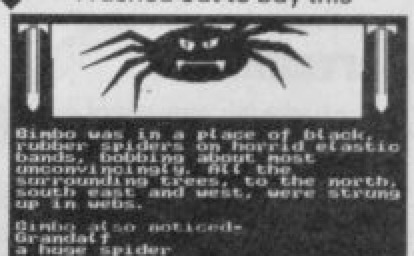
Head W to the lava chasm where you must make a bridge in the usual way to get across. Keep going W to reach a dungeon protected by a heavy door. Closing this will protect you from the effects of both flood and explosion.

I'm assuming the orcs referred to in **Adventure Quest** are the ones on the cairn-topped hill. Eat your fruit on the desolate plain below the hill — this helps to warm you — then go on to the hill by the cairn and take the 49 and 6. You can escape here either by 20 the cairn or alternatively 19,25 to a convenient ledge. By the way, if you drop the 6 here you can stay permanently warm — provided you pick it up after.

The Boggit

First, large portions of thanks to Jon Olav Vicke of Norway and Paul Rockau of East Ham for their complete solutions to the game and then into the action with this letter from N Moore of Southsea.

"I rushed out to buy this



game after reading the review in the August ish. I've had it some weeks now and need the answers to these questions. How do you get the key to open the rock door of the Troll's cave? How do you start the boat on the Black River and where do you get what's needed? What do you do once in the Goblin's cave?''

Linked to this is the plea from Brian Simm of Gateshead and Duncan Wright of Wolverhampton for guidance on how to find and use a light source in the goblin's lair. If you've now



GORDO'S HELPLINE

worked out how to destroy the trolls — I've already dished out this info — you should be able to get in and out of their cauldron without bother. There you'll find the stone key and a weapon. The stone key will let you in the cave and it's there you'll find the answer to the boat-starting problem.

Now to the torch. Once inside the dungeon you should 9,21 and then 16,29. Take what you find and 14,23,1,2,25. Using the rope you should then be able to escape pretty easily — though it's also just as easy to get hurled back in. As for how to find Goldbum in the caverns — the answer to that is explore and 'map'.

And, if you're up to your necks in spiderwebs, Graham Walmsley of Wokingham suggests: "In Berkwood, if you come across a beholder, you should be able to kill it if you've got the cigarette. Later on, inserting a security card into the slot at the Mental Hospital will allow you to get to Drain and free him. Don't forget to get your duty-free on the boat but do pay in cash — don't use the credit card."

Marvelmania

I've had a fair number of queries about **Spiderman, The Hulk** and **Questprobe Three**. Let's kick off with Spidey and a letter from Jordi Espunya of Manresa, Spain. "In the Ringmaster room I've run the computer and typed start but the computer says it needs 950 pounds of paper to work. By getting Doc Conners, Octopus, frozen Hydroman, a desk and a couch I can get the weight up to only 772 pounds. I know I need to defeat Electro to get the gem and run the presses but how?"

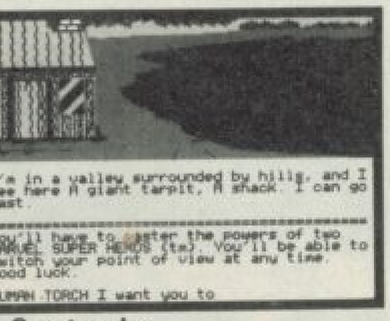
In a similar vein, Matthew Line of Childwall writes: "I'm having trouble finding Electro and Octopus — also how do you defeat them and Ringmaster? Last of all, how do you stop the fan?"

To find the evil bunch you'll have to get upon the roof — 19,7 to do this. Once in combat, 17 Octopus, 4 Electro and, to see the Ringmaster, 24, 11 and 30,11. The fan needs to be slowed down so 28,35 until the rpm speed is low enough. At this point 24,13 to stop it.

On to **Questprobe** where Gene Molloy of Nottingham and Philip May are, like practically everybody else who've played this game, totally unable to save Thing from the tar-pit at the beginning. Hellishly frustrating as I know from my own efforts!

Okay then — just before Thing vanishes beneath the surface of the tar you must tell him to 27,4. He can survive quite a long time like this because of his superpowers. When he gets to the bottom tell him to 40,15. Now 16,31 and 20,31. This will protect Thing whilst the Torch burns away the tar.

In **The Hulk**, the same Gene Molloy and mark Carlton of Dublin are feeling a wee bit crushed. Says Mark: "I'm woebegone because I can't



▲ **Quest probe**

get out of the dome yet — whenever I go through the tunnel I get killed by the High Gravity. Please, Thy Holiness, help me."

At last someone who recognises my worth! If you're in your Banner persona at this point the gravity will surely get you, so it's absolutely necessary to become Hulk — whose warped body can take the pressure. It's quite simple to change into the green meanie — all you have to do is 45,32. A word of warning though — don't do it too early or you'll end up turning back into Banner before you reach safety and probably be killed by the gas. I believe the gas can be stopped by plugging the outlet with wax. Any other information on these games will be gratefully received up here at the Ogre, so if you're a Marvel expert let's have your offerings. Ta.



Artic revisited

Despite their age, Artic's early adventures remain perennially popular, so I've taken a selection of the commonest queries.

First **Planet of Death** and the little green man syndrome. Peter Pijnacker of the Netherlands writes: "How do I get rid of the little green man? If I shoot him I break the mirror — and what about the block of ice, it always melts after a few moves."

Well, the ice is used just to slide down a slope so there's not much point in carrying it around with you. The green man is more problematic. When you spot him you should 44,8. Get and wear what you find there and then head back. 17,43 and 33,43. Your can now kill him with the laser. Now go west and collect the hopefully intact mirror.

H van der Merwe has got a little further on to the lift room: "I've tried everything to switch on the switches there. How can I use the lift buttons?"

Once inside the lift control room you should 24 Buttons 3, same again with Button 2 and finally 24 Button 1 to activate the lift. From here you need to go E to collect the essential starter motor. If for any reason you get trapped in the cell, breaking the bar will get you out.

On to **Espionage Island**. Dave Birthwhistle can't open the parachute after he's jumped out of the plane and so ends up very dead very frequently. To open it 42,34 and 42,36.

Sergeant Moore of RAF Wildenrath has survived the

The Quickies

FOURTH PROTOCOL: Desperate Dan Higginbottom of Sheffield and Andrew Solomon of Cape Town are both stuck in the second part because they can't work out the lift code to get up to the office. Right, no beating about the bush — you'll know that the first lift code is ASPEN but the second is a number. After getting off at Westminster, head east to Sentinel House. Your office is on the first floor and the lift code you'll need is 42431282.

ROBIN OF SHERWOOD: Janet Whittelsey of Knaphill can't escape from the dungeon in the first screen. First climb on the shoulders of your fellow prisoners and then examine the grating. You may need to 'wait' until a guard arrives. When he arrives 47,39 and then 46,41. He will drop something which will enable you to slide the bolt and open the grating. Then make sure you get out quick!

PRICE OF MAGIK: A neat cheat from Ian Hardie of Tynemouth. "If you get killed, type *Restore* and answer the Lenslok questions and codes wrongly. You should start again in your last location with 250 stamina points." This section's more like *Zap Chat* every day.

MINDSHADOW: M Arends of Hitchin has killed Jared but can't drive the car and there's no clear indication of what to do next. Very little actually as you're right at the end of the game! Reading the note and thinking 48 will finish the game

LORDS OF TIME: Sergeant John Moore again. He can't use the clock to transport him to the different time zones. Turning a cog in the clock selects a time zone and you push the pendulum to open the door to the zone, then go N to enter it. You can get back to the clock from the first eight zones, so don't use the ninth until you're sure you're good and ready.

NEVERENDING STORY: Gordon Lee of Singapore asks where he can get the stick to burn the bushes in Part 1. Get the knobbly branch and light it at the campfire. Chris Whetlor of Droitwich wants to know how to get into the tunnel and how to cross the desert. The lighted brand will give access to the tunnel but you'll need to 17 Falkor to cross the sand — 10,2,18 will summon the beast.

VALKYRIE 17: Martin Thielen of Essen needs money — perhaps he should try pawning somthing. Poor old Matthew Wood hasn't got this far as he can't find the ski-sticks. These are shown but not decribed beside a hut, deep in the snows beyond the hotel — you'll need to trek out there to collect them.

EUREKA: Gary Robertson of Forfar keeps getting killed for insolence when he tries to greet Nero after winning the chariot race. First requirement is an invitation which can be got by using the potion. To greet the Emperor you must do so in proper Roman style and say 50,22. Chris Jones of Formby wants to get safely through the minefield in wartime Germany — using the bayonet between each move will help. Finally Chris asks how to make the uniform with the sewing kit and blankets — as far as I know it's done by simply saying Make Uniform and then by wearing the thing.



GORDO'S HELPLINE

jump but: "On getting started I've a match and branch. How can the native women help and how do I get in the dark corner?"

Well, if you 40,37 and 42,38 you'll find something which will be useful as a present. She'll give you something useful in return.

But don't be violent towards her, whatever you do.

Finally, Will Thomas of Blackwood wants to remove a key from a glass case in **Ship of Doom**. By this point he should possess the sonic screwdriver and the glass can be shattered by simply pointing this tool towards the glass.

Information Exchange

David Whiteman of 7, Valley Drive, Westwood Park, Leek, Staffs ST13 8NQ says he has one aim in life — to help other adventurers. He's completed 15 games including **Robin of Sherwood, Robin of Sherlock, Bored, Gremlins, Terrormolinos** and **Valkyrie 17.** Send an sae

The Hole Dweller (sounds unappetising!) of 19, Gordon Road, Leckhampton, Cheltenham Glos. GL53 OES has **The Boggit, Bored, LOTR** and **Quest for the Holy Grail.** Write prepaid with specific questions

The Perambulin Goblin, The Diary, Low Habberly Farm, Low Habberly, Kidderminster Worcs DY11 5RE has got through a wide range of games including **The Hulk, The Helm,** both **Subsunk** and **Seabase Delta** as well as the infamous **Sinbad and the Golden Ship.** He will charge 20p plus sae to cover costs — but you can ask an unlimited amount of questions

Neil Churchill of 35 Hales Road, Wood Green, Wednesbury, W. Midland, will help with **Spiderman, The Hobbit, Spellbound,** and the Gargoyle games — in return for an sae and question.

Gordon Lee of Apt.Blk.128, Toa Payoh, Lorong 1, 09-833, Singapore 1231 will offer help with **Hampstead, Tower of Despair, The Hobbit** and **Gremlins** in return for tips on **Return to Eden, The Hulk** and **Neverending Story.**

Heavy on the Magick

Finally, I think I may have to consult a sorcerer to see if the gremlins that haunt these pages can somehow be exorcised — yes, apologies are due yet again, this time to the **Heavy on the Magick** fans who eagerly scanned the astrological key-sign information in the October Ogre, only to find that the essential zodiacal glymphs had not been printed in the box.

Personally I blame the Mad Celt who, as Kelly himself told me, once did an O Level in Elementary spell-casting.

Phew, that's it for this moon chums. Keep that mail pouring in! ■

Gordo Greatbelly, Landlord

Table 1. Heavy on the Magick Zodiacal

ARIES	♈
GEMINI	♊
TAURUS	♉
VIRGO	♍
LEO	♌
AQUARIUS	♒
LIBRA	♎
CANCER	♋
SCORPIO	♏
SAGITTARIUS	♐
PISCES	♓
CAPRICORN	♑

GREATBELLY WORD MATRIX

1: Into 2: The 3: Breath 4: Hit 5: Say 6: Brazier 7: Up 8: East 9: Dig 10: Blowing 11: Knob 12: Blast 13: Button 14: Insert 15: Ground 16: Smash 17: Get 18: Horn 19: Jump 20: Entering/Enter 21: Sand 22: Caesar 23: It 24: Push 25: Down 26: Sword 27: Hold 28: Cast 29: Trapdoor 30: Turn 31: Machinery 32: Lip 33: Drop 34: Lever 35: Web 36: Cord 37: Corner 38: String 39: Ankle 40: Feel 41: Guard 42: Pull 43: Man 44: Go 45: Bite 46: Strangle 47: Grab 48: William 49: Starstone 50: Ave

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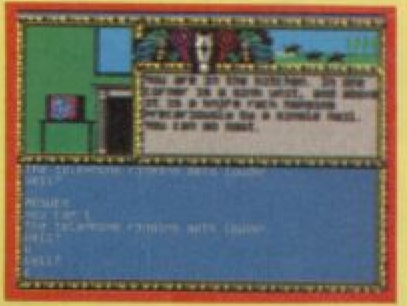
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TWICE SHY







Dick Francis is said to be the Queen Mother's favourite author — she reads every one of his racing thrillers, which is a heck of a lot of words. He's written well over 20 by now.

Does this mean that Mosaic, by publishing an adventure game based on the Francis novel *Twice Shy*, could become software publishers by appointment to the Royal Family? Somehow, the image of Britain's favourite grandmother hunched over a Spectrum is rather appealing.

In Twice Shy, the adventure game, you are Jonathan Derry, a lowly physics teacher at East Middlesex Comprehensive. At some point during the game, you will find a set of cassette tapes. Certain other less than scrupulous people are going to try to take them off you. Who are they? What does it mean? Who's trying to stop you finding out? What's running in the 3.30? Why is the AA man so mercenary? And how come you can wander around for hours carrying a loaded Enfield rifle and not get arrested? These questions, and more, will be answered — if you're clever enough.

The adventure. Begins, as so many adventure games do, in your living room. With you is Sarah. As I haven't read the book, I haven't the faintest idea who she is, but since your aren't allowed to answer the phone and she is, she's very useful.

She leaves almost instantly, to go and offer to succour some friend of yours who seems to be stealing babies (not your usual adventure game, this one), suggesting as she flies out the door that you should meet her in Norwich. Why she didn't wait for you I can't work out.

Searching the flat turns up an interesting collection of items including a gun, a cheque, pills, exercise books and a pink towel. If you don't look on the mantlepiece, you won't even get out of the house.

Outside you'll find your car, a battered grey Peugeot. You can use this to drive around — you're advised to forget about walking if you try to get away from your house on foot.

Incidentally, this is one thing I did find a bit annoying: you get told the exits from a location, but not whether they are exits for motorised transport or for Shank's pony.

Location wise, Twice Shy seems to be big. I've been to well over 30 places and I hardly seem to have got anywhere. At first, you find yourself driving round beautiful downtown Northolt, but you can soon find yourself on the M25 on the way to Welwyn Garden City. Unfortunately, I keep on getting lost on an intersection, running out of petrol, and having to be rescued by my friendly AA man, who demands £15 quid to tow me to the nearest garage.

There are rather too many mazes for my liking, including a caravan park that you don't seem to be able to find your way out of. I tried dropping something to mark where I'd been, but the item dropped — a pile of exercise books — just kept moving with me. The shopping centre is another maze, which I managed to get out of by going in a direction not listed on screen.

The screen, by the way, is divided into two main sections. The top half contains graphics showing your present location and a window containing a description of that location: the bottom half is for communication with the program, and is also where it tells you about items you have found. The graphics are excellent, and the program has an impressive vocabulary.

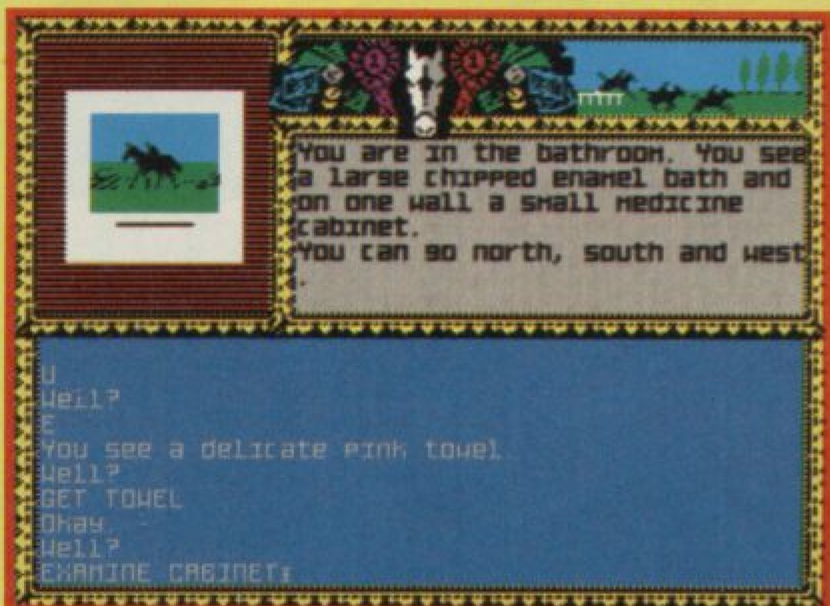
Incidentally, on the reverse of the tape, there's a bonus — a racing simulation game which can either be played separately or in conjunction with the adventure.

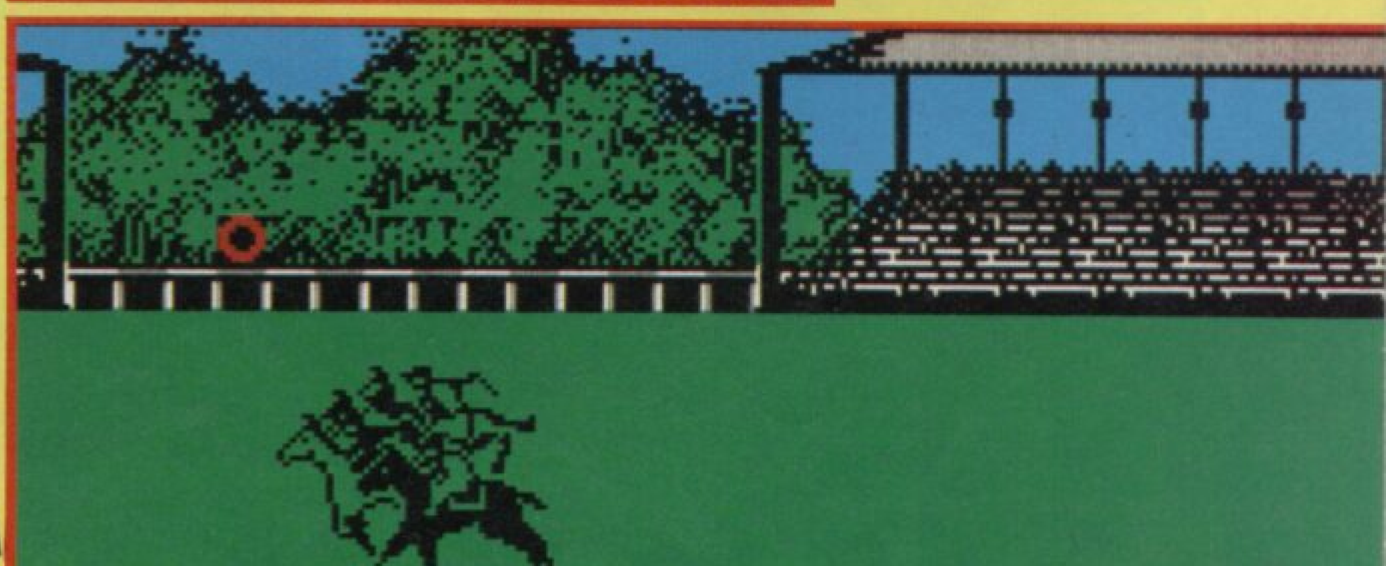
You are at the races for the day, and there are six events on the card. In each race, four horses are running. You get told the odds, the weather conditions, the going, and can examine the form book on each of the horses. If you're playing for fun, then you can just keep on piling up the money — assuming you've got half a brain and the sense to study the form book properly, along with a reasonable idea of how to cover your bets.

If you're at the races as part of the adventure game, then you'll be allowed to take up to £250 back into the adventure.

Twice Shy — despite the fact I haven't got an awful lot further in the adventure — looks like a very good game. The programming is excellent and the graphics add a lot to the feel. There should be enough meat here to keep any adventure buff going for a good few hours — and the race game's fun too.

I found it difficult and, though, a bit disappointing that nothing dramatic happened in the first 30 locations — nobody shot at me, no murders, no car chases■





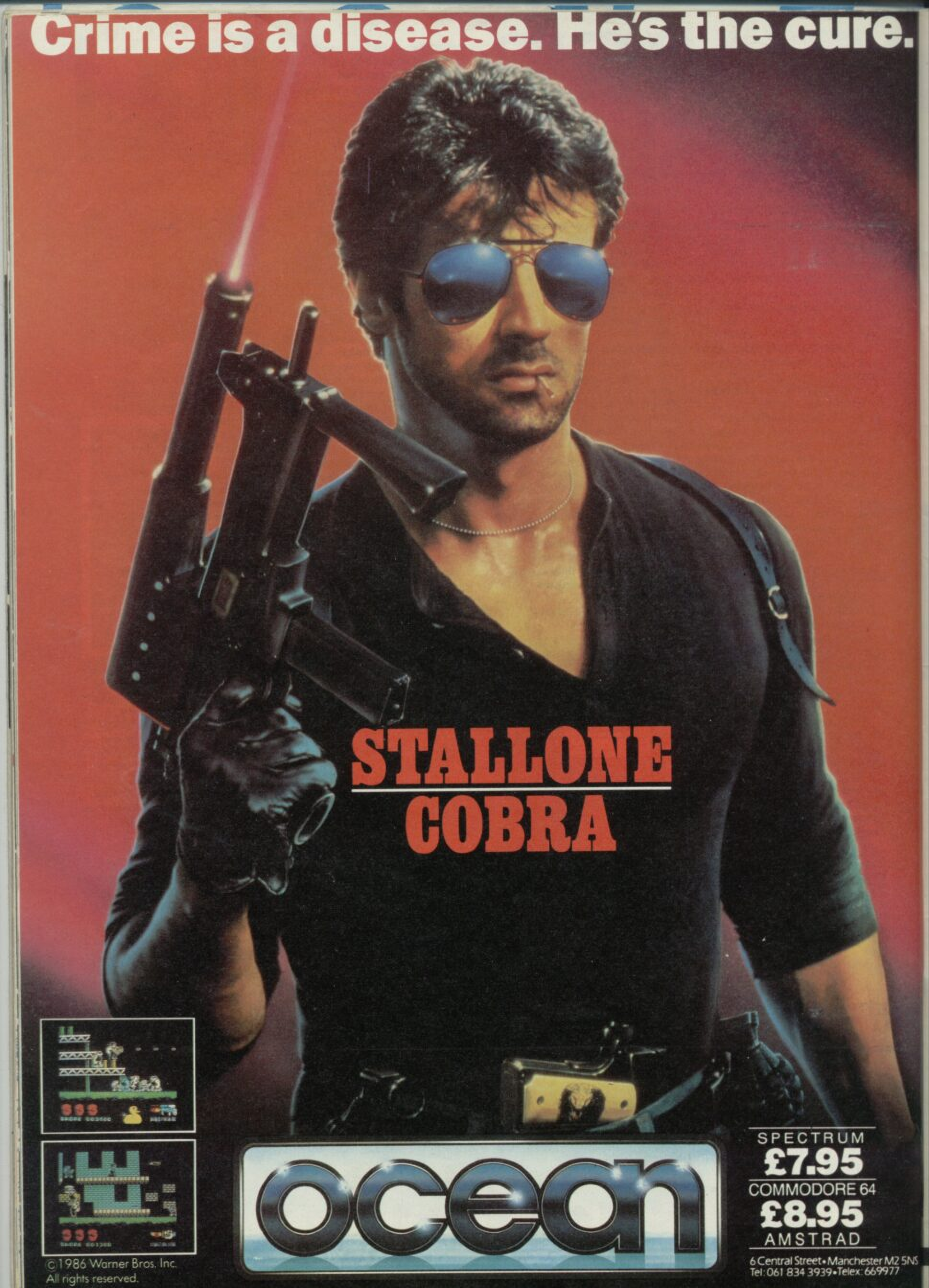
FACTS BOX

Big adventure, good atmosphere and useful graphics. Could have done with more insto excitement

☆★★★★

TWICE SHY

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ADVENTURE REVIEW

BUGSY

OK, kid, so what's da matta, huh? Youse guys can believe in tings flyin' tru space, an' magic swords, and mytical football teams an da loike – but youse have problems wid a tree foot tall bunny rabbit who's fur is a kind of neat blue, huh?

Waddaya, racist? Or is it da tommy gun dat freaks you out, huh? O'll show ya – Happy Valentine's day . . . DAKADAKADAKA. . .

Mugsy is weird with a capital W. I've done a lot of things in adventure games over the years, but never before have I had to control the destiny of a blue rabbit – named Bugsy Maroon – climbing the ladder of success in the Chicago underworld of the 1920's.

The game is written by what has to be one of the craziest adventure houses around – The ladies of St Brides School live on the west coast of Ireland. Their stated aim is to recreate the atmosphere of those old books about high jinks/kinks in girls' boarding schools – you know, Trixie Tries It On, Hurrah for the Upper Sixth, Mona, You're a Brick and so on.

Anyway, that's neither here nor there.

Remember Melbourne House's **Mugsy?** That strip cartoon adventure game where you had to help the eponymous hero make it as a crimelord. Well, **Bugsy** is what you might call a pastiche of **Mugsy** – and very good it is for all that.

Our story – or rather, one story, because there are two stories running simultaneously and. . . I think I'll stop trying to explain, and just tell you what happens. Freud maybe could make you understand, but I ain't him. It begins in the common room of St Brides School. A bloodstained, blue three foot tall rabbit staggers in and prepares to expire on the carpet. But wait, says plucky Trixie! All you need to aid you in your quest is some twit on the other side of a computer screen – which means you, buster.

And so, after this rather strange introduction, you find yourself in the even stranger world of Bugsy Maroon. Chicago in the 1920s, and everything is apparently coloured sepia, though not according to my TV screen.

The game is set out in classic style: graphics window above, text below. Graphics are very detailed and garishly coloured, if a little angular. The neon sign outside the bar even flashes!

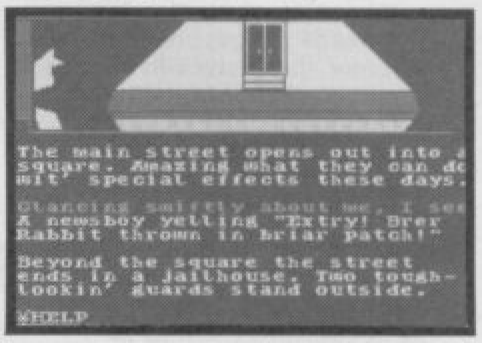
Text is good, also garishly coloured, and the flashing cursor is a rabbit's head. Location descriptions are long and in many cases very funny.

So when you reach one of the rough neighbourhoods, you get told: "The kids here are so tough that when they can't find wood they whittle their fingers."

At first it drove me mad: I just couldn't get anywhere. Or rather, I could get places, but I'd done everything I could in every place I could get to and I just wasn't making any further progress. Or so I thought.

Then, finally, I lost my temper in the bar, and typed in something I was sure would get me killed – and bingo, I'd solved that little problem and was able to get into the game proper. I don't want to give away too much (let 'em suffer too, says I), but remember that you don't need any weapons to deliver a rabbit punch.

Once I'd overcome my initial shyness around strangers, I was able to make two new friends, Louie and Muscles. Muscles has something you need very badly, and he seems quite happy to sell it to you for nothing. (Oh, by the way, you discover that



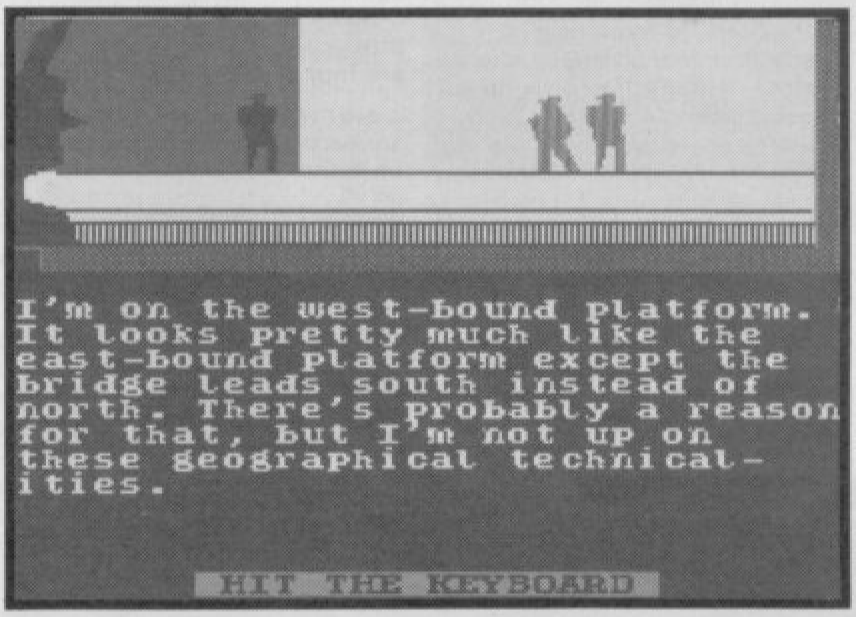
Bugsy is from Coney Island – geddit?)

You can now saunter out of the bar and, properly attired, assault all the local newsvendors you can find.

With the money you've earned from an honest day's labour, you can purchase a gat. Now, you might think the obvious next step is to rob the bank – but you really should hire some back-up for that. And you'll have to find some more money from somewhere to hire some hoods. . .

There are actually two different games on the tape – one on each side. You have to solve Game 1 before you can get the password which allows you entry to Part 2. As I haven't come anywhere near solving Part 1. I can't tell you a thing about it, except that your efforts so far seem to have made Bugsy number 10 in the most wanted hit parade – and he won't be satisfied until he reaches number one.

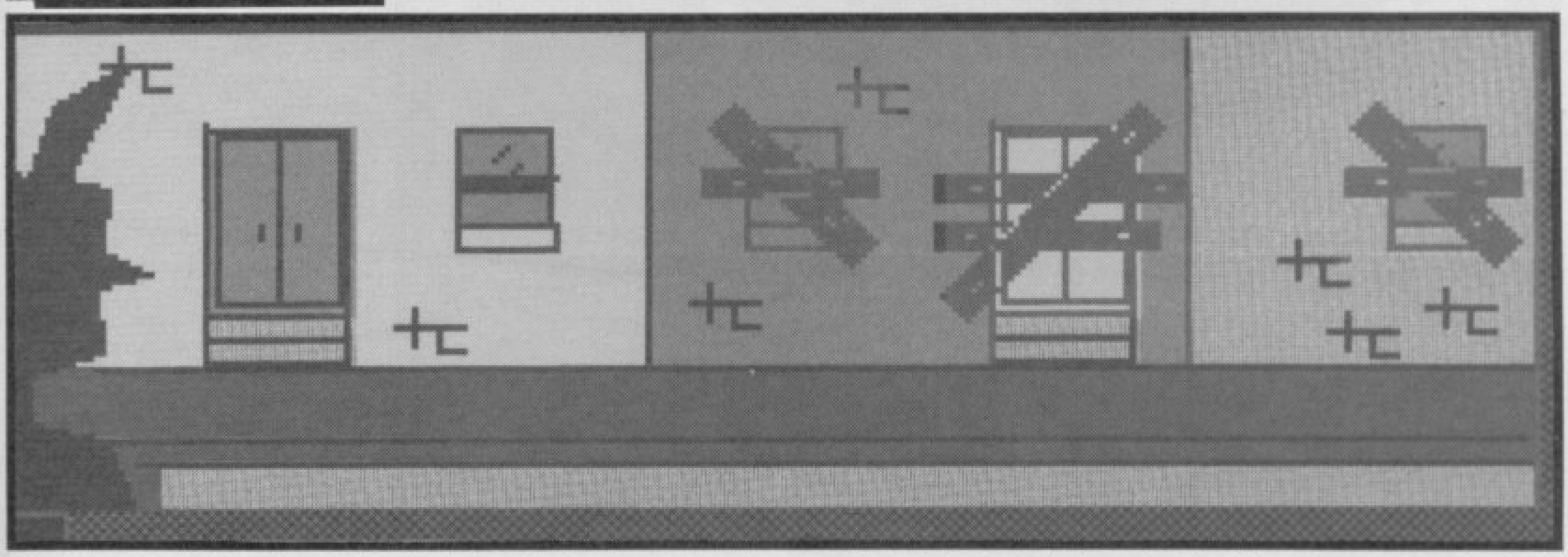
I could rabbit on forever, but you'd probably start tearing your hare out. Suffice it to say that mugsy is an excellent game, with a great line in wry humour – I was lapin' it up all along. And I haven't spotted any Bugs yet. . . Nyeah, what's up, Doc?■



FACTS BOX

Fast, funny, zany, wacky, worth it. Buy it before you end up in the harbour with a set of concrete wellies

★	BUGSY Label: CRL
★	Author: St Brides
★	Price: £7.95
★	Memory: 48K/128K Reviewer:
★	Gary Rook



R incewind isn't much of a magician or, for that matter, much of anything else.

Totally broke, down at heel and shabbily dressed in some faded robes, he broods on the injustices of life as he slowly sips at his mug of cheap ale in the filthy taproom of *The Broken Drum*.

As wizards go Rincewind is an abject failure. Right at the beginning of his training he managed to get one of the eight major spells stuck in his head and thereafter found himself completely incapable of learning any others. What's worse is that he can't even use the spell that's blocking the rest. His only real skill is with foreign languages and he turns a few coppers now and again by interpreting and translating for the tiny numbers of tourists who come to see the unlovely city of Ankh-Morpork.

Ankh-Morpork, a warren of squalid slums, guild-houses of questionable professions and a few temples to odd gods, is one of the great cities of the Discworld. As the name suggests the Discworld is flat and, more like a celestial LP than anything else – presumably without the hole in the middle. As it spins majesticaly through space it's supported by four immense elephants who, in turn, are carried along on the back of Great A'Tuin, a cosmic turtle.

There are lots of theories about this weird set-up. Some folk believe A'Tuin just crawls along forwever whilst others believe he's heading for the great mating-place in the sky. Here he'll meet the other turtles who carry all the other stars and planets through infinity. This is known as the Big Bang theory.

Rincewind's bizarre world is the setting for Delta 4's new game **The Colour of Magic** – produced by Piranha, fishy offshoot of the vast Macmillan publishing empire.

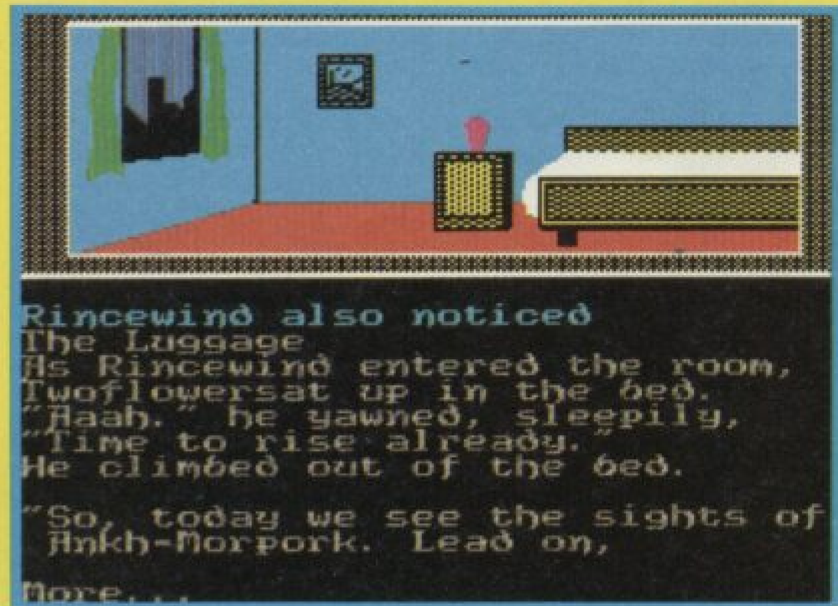
"Pretty silly name for a software company" said I to Fergus McNeil, doyen of Delta 4, as we chatted about the history of the game. "Silly?" he raised an eyebrow "It's a damn sight better than Codsoft or Halibut wouldn't you think?" There's no answer to that.

Unlike Delta 4's other productions its new adventure isn't a spoof or a knockabout farce – though it has plenty of wry humour. This time they've done a fairly faithful computerised rendering of Terry Pratchett's fantasy novel **Colour of Magic.** Fergus worked closely with the author over the months of development. He'd phone Terry when they got stuck, let him have a bath to think about it and then call him back afterwards, letting the words of wisdom drop from him like the bathwater.

The adventure follows the original storyline closely so it could be an advantage to have read the book before you play – this isn't essential though and the novel won't be included in the package. I suspect that plenty of fantasy addicts will be persuaded to go out and buy the book after playing. The setting has lots of similarities to the world of Fritz Leiber's **Lankhmar**, a place where dumb heroes and ironic wizards battle against magic and evil.

So far Delta 4's hits have been three-parters. This time there are four sections, giving you a big game for your money and giving Delta 4 the chance to use a lot of memory for atmospheric description, making it seem much more like a computerised novel than some previous bookware efforts.

COLOUR OF



▲The bedrooms at the inn are notoriously vile ● But Twoflower just finds them quaint ● A new day dawns as Rincewind prepares to show his client the sights

As usual the adventure is written on the *Quill* and *Illustrator*, though there won't be vast swathes of location graphics. Enough to set the scenes, yes, but not so many that they'll reduce the memory space for the descriptions and responses. That way you'll get the feeling of playing the real, book not some truncated, amputated version that sacrifices flavour for pictures.

So what about the story then? Well, whilst our hero Rincewind is busy downing his thin beer, in comes some character from out of town. Clearly very, very loaded as he can afford to own a travelling chest of sapient pearwood – so sapient, in fact that it can travel on its own on its hundreds of tiny sapient feet. Rincewind, being well aware that the chest is worth more than anything that might be put into it, star opals, gold, what have you, is happy to help the tourist out by a spot of translating.

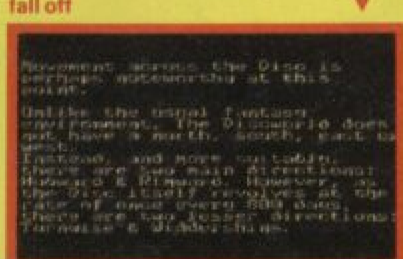
After allowing Rincwind to sort out his room for the might, Twoflower the tourist decides to hire him as a guide and slips him a handful of gold rhinus as a retainer. If you, in the role of raggedy Rincewind, decide to do a quick flit with the cash, you'll pretty soon find out that Twoflower is very important to the nervy officials of Morpork and that they will expect you to take very good care of him. After all he's a representative of the powerful Agatean Empire whose fleet can squash Morpork like a bug under a boot.

So Rincewind, motivated by greed and by fear of the tortures he'll suffer if he loses the tourist, heads back to the inn to show Twoflower the sweaty sights of the town. Whilst Rincewind tries to fathom the workings of Twoflower's iconograph, a picture-taking machine run by a demon that lives inside the box, dumb Twoflower is kidnapped.

Then the fun begins.

Part 1 of the game is basically a scene-setter where the magician and tourist set up some sort of relationship and Rincewind desperately tries to free his client, ably aided by the

A brief digression on movement around the disc ● Mind how you go ● You never know, you might fall off ▼





◀The nastier end of Short Street which, of course, is the longest in town ● Beggars lurk here ● If you're generous your luck may be helped along a bit

MAGIC

ADVENTURE REVIEW

SINCLAIR USER CLASSIC

FACTS BOX

A recipe for entertainment that easily matches the delights of Bored or The Boggit. Pratchett and Fergus was inspired.

★	THE COLOUR OF MAGIC
★	Label: Piranha
★	Author: Delta 4
★	Price: £9.95
★	Memory: 48K/128K
★	Reviewer: Richard Price



▲Twoflower's travelling trunk

ambulant luggage which has the *Jaws*-like quality of being able to snap people with its formidable lid. Since Rincewind isn't licensed to fight – he's not a member of the Assassins' Guild – the chest's fighting skill is pretty useful.

Basically, Twoflower will keep on being captured, endangered or simply disappearing throughout the adventure and, once the pair leave the city in Part 2, the hazards become tougher and stranger and the magic more and more powerful.

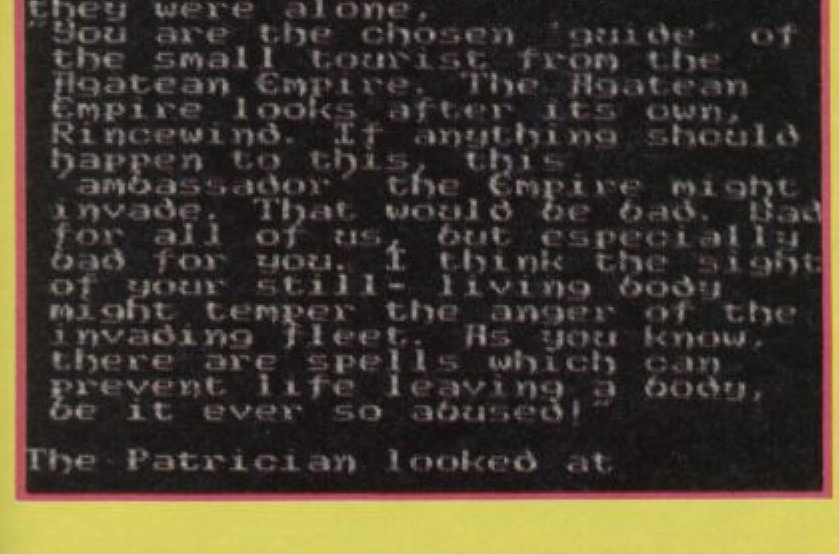
By Part 3 the fabric of the universe is so shot through with it that simply believing in something will allow it to be created!

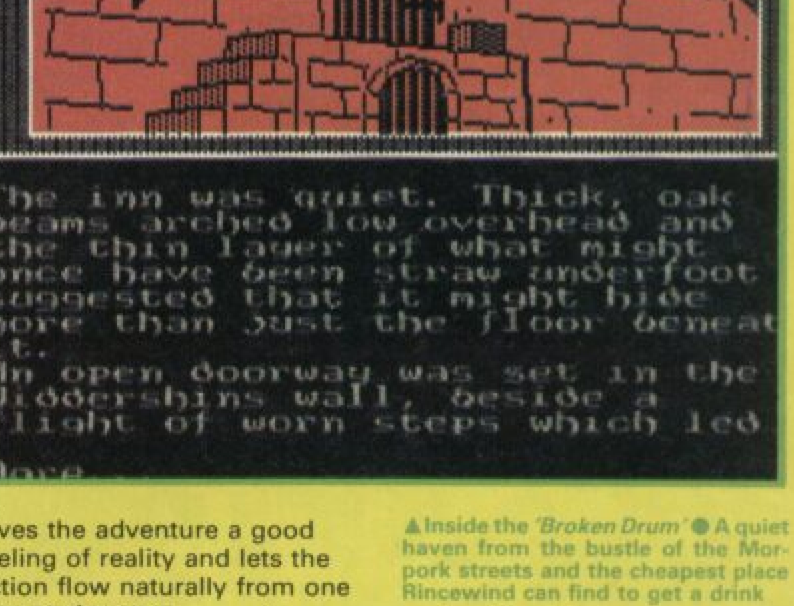
The travellers will learn that the gods are actually playing some strange chess-game with them, meet a new friend – Hrun the barbarian – and encounter dragons, lethal temples and a mountain: 'huge, grey and upside down, like a stone trumpet stuck in a bucket of moss.'

Movement in the game is slightly different from your average adventure. Because Discworld is flat there's no set of compass directions. You can either head to the centre of the disc – Hubward – or out to its edge – Rimward. Naturally you can also walk around the disc either in the direction of its spin – Turnwise – or against the spin – Widdershins. This takes a bit of getting used to but soom becomes second-nature.

The story is as important as the gameplay and there are some very full descriptions to make you feel at home in Discworld. So, at the inn: "Rincewind absently raised his mug and gulped down the last of his beer. Having lived in Ankh-Morpork all his life the drink's effect on his mouth came as no surprise. He was in no doubt though – it wasn't worth the money. Blind Hugh came down the steps from the courtyard outside. Looking very deliberately ahead of him he walked across to the bar where the landlord Broadman greeted him, then gaped at the stairs. . ."

This is only part of one chunk of detail and, though you won't get this much in every location, is typical of the general quality of the text. The storytelling





gives the adventure a good feeling of reality and lets the action flow naturally from one step to the next.

The game plays as a standard text adventure not, like Level 9's **Adrian Mole** for instance, as a series of multiple choice questions. This means you'll actually have to solve problems as they arise. If you do it wrong you'll probably end up meeting the bumbling figure of Death, he whose empty eye-sockets are "a dead giveaway" and whose schedules have all been thrown awry by some divine accident.

"Why are you here?", he says to Rincewind at one point. "I'm supposed to get you in Psephopolis."

"But that's 500 miles away," whimpers Rincewind.

"I know, I know. The whole system's got screwed up," answers Death irritably.

This dry and gentle humour occurs throughout the game

◄Rincewind's escape attempt has failed ● He winces as one of the city bosses 'persuades' him to co-operate with their plans

▲Inside the *'Broken Drum'* ● A quiet haven from the bustle of the Morpork streets and the cheapest place Rincewind can find to get a drink

and, whilst it's not as rumbustuous or rude as in McNeil and Co's previous offerings, gives the proceedings a nice comic lift.

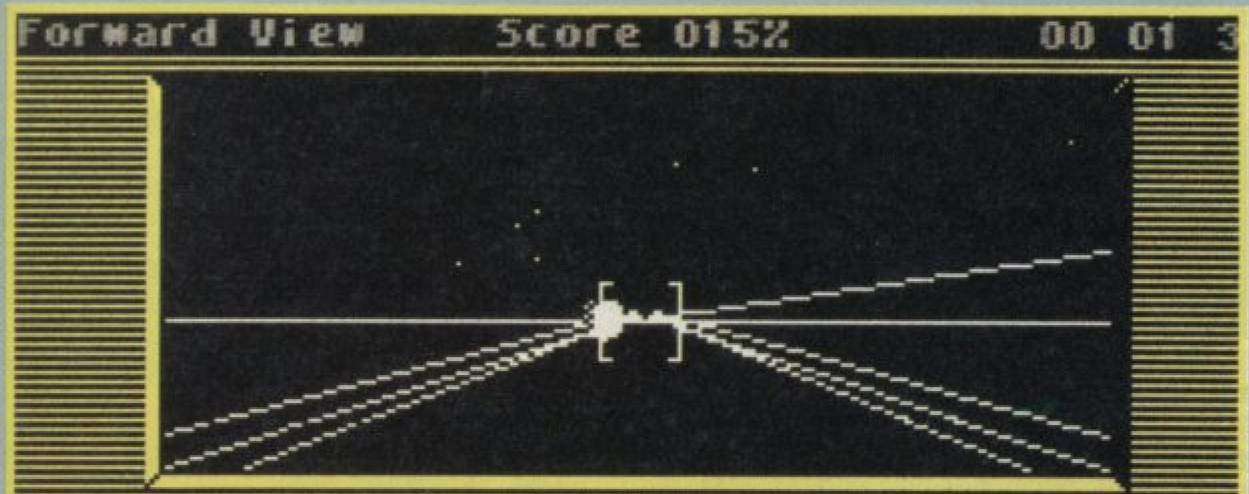
As you progress through Discworld you'll find that almost every other step has to be sideways to escape Death's boney clutches.

He constantly offers the scraggy wizard tempting chances to snuff it – "Go on", he urges as Rincewind hangs by his fingernails above a starving pack of wolves, "Let go, it won't hurt."

Through playing the game and scurrying out to buy the book I've become a firm, if occasionally dazed and bewildered, fan of Rincewind.

When you add Twoflower's crazed enthusiasm for the picturesquely lethal together with the problems – across four game *Loads* – you'd be hard-pressed to find a current piece of bookware to compare with **The Colour of Magic** ■


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ACADEMY

Tau Ceti is – even today – CRLs finest hour. It not only sold a lot of copies but changed the image of the company considerably. It was instant credibility. Now we have **Academy** which is, effectively, **Tau Ceti II**.

Tau Ceti was all 3D **Elite** style line graphics, skimming across an alien planet's surface blasting things.

Academy is **Tau Ceti** massively expanded and improved. Instead of one single plot, the game has dozens of separate missions loaded in groups of four. You not only select a mission but also the equipment with which to tackle it – deciding according to what features will be necessary to cope with the planetary conditions and whatever obstacles could be involved.

This time you can build your own skimmer. How you construct it changes the gameplay. It affects the entire screen layout – information displays, position of cockpit 'window' on the outside world etc. It also effects in a noticeable way the handling characteristics of the ship.

Selection of missions and skimmer design are all accomplished by menu. Mission information includes a nifty picture of the planet involved and technical read-outs indicating the task ahead of you and giving practical advice.

FACTS BOX

*If you liked **Tau Ceti**, Academy will leave you awestruck. One of the best 3D games on the Spectrum ever*

★★★★★

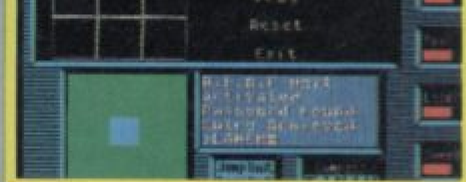
ACADEMY
Label: CRL
Author: Pete Cooke
Memory: 48K/128K
Joysticks: various
Reviewer: Graham Taylor

Some missions are very specific – one in the first section requires you to shut down a reactor. Other missions are obvious. The one called 'If It Moves' requires nothing more than the complete destruction of everything that isn't you (more or less). You win when you amass an over 90 per cent score – that's a lot of killing. It provides a nice brutally violent first mission to get you going.

Different planets actually look different. 'If It Moves' features a planet with continuous lightening storms flashing across the sky. Other planets have giant suns filling the horizon or other unique touches.

The basic look of the game is similar to **Tau Ceti**. The same ultra-smooth movement, the same shaded geometric shapes representing buildings and enemy craft presented with one of the most convincing 3D routines I've seen on the Spectrum.

It isn't all shooting – there are places to dock to restore energy levels, make repairs and get new equipment. As with **Tau Ceti**, you dock just by flying towards a suitable building and lining up with a rectangular hatch. In some missions there are buildings which have to be entered without permission – this involves code breaking.



Flight controls are joystick plus keyboard for height and the launching of missiles, AMMS (anti missile missiles for when somebody else launches something at you) and flares to light the sky. On some planets a *Jump* command is also available. If you find a jump pad it works as an 'instant transport over large distances – which is really useful.

Academy is utterly astonishing. Not the least astonishing thing is how Pete Cooke has crammed so much into 48K. It's **Tau Ceti** writ large, as though someone had hacked into that game, stolen the movement and graphics routines and some of the plot and added around 200K's worth of extra material, except that somehow it still runs on a normal Spectrum.

It passed the 'everybody in the office stops work to look' test which is always a good sign.

I don't see how, with a whole tapeful of extra missions (20 in all) you could exhaust even half the game by Christmas.

Buy it, buy it, buy it■







EYE-Q

Is **Eye-Q** the definitive QL graphics package? It's a tall order but, looking at the comparisons between **Eye-Q** and the other art packages on the market DP's program wins, no problem.

Eye-Q is fully menu-driven with cursor key, joystick or mouse control of drawing tools and menu options. It includes rubber-banded shapes, new character sets, multi-coloured sprites, scrolling, full paint box, *Cut, Paste,* and even 32 cursor sizes.

Rubber-banded lines, circles, boxes and ellipses can be filled with a wide range of colours and stipples. Freehand and airbrush options are available to add detail to the shapes while x4 and x16 magnification wil blow up images to make sure *Fill* ink doesn't bleed through on to the remainder of the screen.

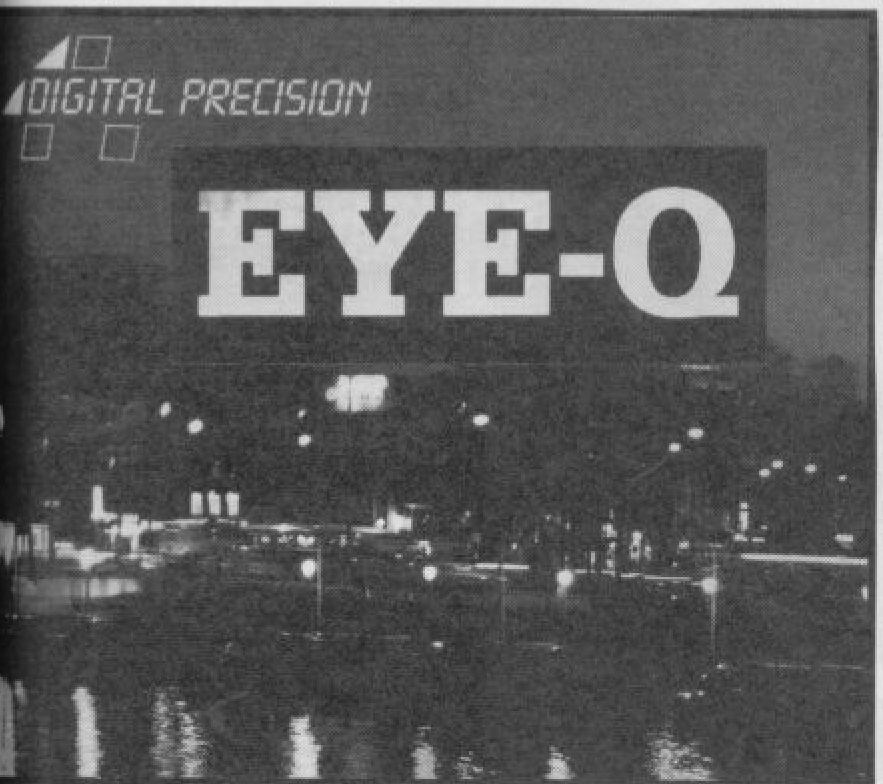
FACTS BOX

Digital Precision is right. This is the definitive QL art package, hi-res, colourful and memory critical. Go out and get it.

Eye-Q
Label:
Digital Precision
Price: £29.95
Joystick/mouse: any
Memory: 128K/512K

Reviewer: John Gilbert

★★★★★



You can *Cut* and *Paste* areas of the screen – transfering one area of the screen to another – or manipulate the whole screen by reversing, inverting and stretching images. You can also compress screens so that they require less memory room within the machine and on cartridge – or disc.

DP claims that the compression technique is unique. It's intelligent and doesn't use the normal method of compression installed on Spectrum graphics packages such as **The Artist.** The package can apparently compress screens by two thirds or more of Ram storage space which is ideal if you want to operate on several screens during one design session.

Text and graphics can be displayed side by side on screen. There are eight sizes to text and you can use the integral character editor to create new fonts. **Eye-Q** always holds the default font so, if you make a mistake in the middle of the alphabet you can bring the default back into position.

Eye-Q will also work on any output device. Whole screens and parts of screens can be saved to Microdrive, disc or any other mass storage device you care to mention. Screens can be saved in full colour or monochrome or automatically dumped to a dot-matrix printer through the user-definable printer driver – which is set to an Epson default.

Digital Precision isn't making rash claims when it hails **Eye-Q** as the definitive graphics system. It's easy to work with, and the results are impressive – even from a beginner like me.

A shame then Digital had to go and include, as demo screens, a suite of pictures of *Playboy*-type centre-folds.

Inexcusable, for a professional package and Digital should have known better■

QL REVIEW

DROID ZONE

The main mission's over but, on your way home from the great space battle, you're trapped by a black hole and plunged into the **Droidzone.**

Hundreds of aliens hone in on your pencil-shaped space ship as it whizzes clockwise and anticlockwise in a close imitation of that classic arcade game **Tempest.** The evil droids shoot out from all sides of the screen in a pre-programmed death dance. Their appearances are not so programmed and if you're in their way as they swirl and bop to the middle of the screen no amount of laserpower will stop their crushing might.

There are three levels of play which are set at the beginning of the game. The slow level is adequate for beginners, intermediate is little different, and difficult, sadly, fails to live up to the standards of most arcade expert zappers I know. Still, maybe QL zappers are a breed apart.

Droidzone has colourful Atari-style graphics but, in fairness to QL users, is fairly mind numbing. The game would have been hot in the age of games consoles five years ago – but is unlikely to enthrall many arcade fans this Christmas■

FACTS BOX

An arcade game, loosely influenced by Tempest, but a good deal more sluggish. Nice idea shame about the speed

DROIDZONE
Label: Digital Precision
Author: Paul Tuck
Price: £9.95
Joystick: any

Reviewer: John Gilbert

★★★☆☆

BLOCK LANDS

Speed is important in **Blockland Warrior.** The enemy – block creatures with massive nashers – are fast and intelligent. They'll never let you alone.

The nasties, as they are predictably described by Digital Precision, rely on a sacred jewel, hidden on one of the multitudinous levels. Find the jewel, destroy it and you've won the game.

That's easier said than done, mainly because of the speed of the creatures and the vast hoardes which latch on to your tail during your flight through each level.

One door at the bottom of each crudely-depicted landscape is the only means of escape. Each level contains weapons and food – which just happen to be scattered around for you to find – but each moment of joystick inaction is dangerous to your health. If the critters catch you their cubiod bodies will convert you into a standing block.

One good feature is, if you find the game too difficult, you can create your own screens putting blocks, guns and food where you will. You can't alter the intelligence of the nasties but you can clear a passage for a flight to the nearest level door.

Blockland Warrior is one of the most graphically awful games I've seen this year, but the speed at which it plays diverts your attention from the presentation. As there are so few games for the QL I won't actively disuade you from buying DP's blockbuster but I'd at least think twice■

FACTS BOX

A game for blockheads who have lots of money to spend. Quality of graphics is traded, unwisely for speed of play

BLOCKLAND WARRIOR
Label:
Digital Precision
Price: £9.95
Joystick: any

Reviewer: John Gilbert

★★☆☆☆





BR

THR

£7.95 SPECTRUM. £8.9

HIGHLANDER

It's Manhattan 1986.

In a vast underground garage beneath Madison Square Garden, two men are locked in mortal combat.

The huge cavern echoes to the sound of clashing steel. For although this is the 20th Century, one combatant wields an ancient Samuarai Sword, the other a broad sword.

But there can only be one Highlander.

STREETHAWK

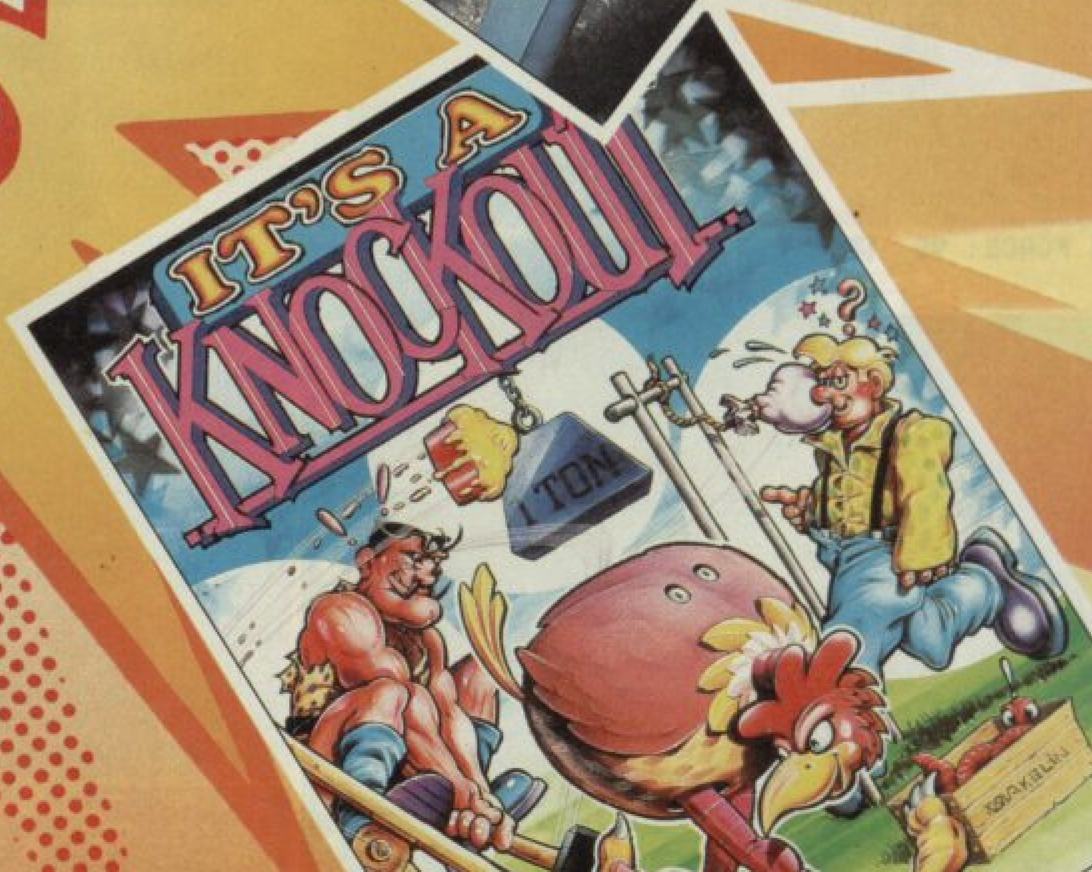
Get a taste of what it feels like to be a street cop with a test pilot mentality in this stunning simulation of the hit TV series. Become the hunter and the hunted...burn tread on the streets!

MIAMI VICE

When the going gets tough, the tough get going. Crockett and Tubbs have got word that a contraband

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shipment is due in town. So how do the crimebusters get their man?

It's a mean scene. Shoot first and you'll lose the news, but keep your finger on the trigger or you'll be the news.

IT'S A KNOCKOUT

All over Europe they're playing It's a Knockout, and just like the hit TV series it's all about fun. Whatever country you choose, be prepared for a bag of surprises. It's a Knockout for all the family.

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Distributed in Germany by Rushware. Telephone: 2101-70040.

ADVENTURE REVIEW

FAIRLIGHT II

So there you are stuck outside this castle in the land of Fairlight feeling pretty good about yourself.

You cracked the problems of **Fairlight I** finally completing your task when you handed over the Book of Light to the Dark Lord. Ere, hang on a minute. What's this?

Another quest? Yup. Through the land of Fairlight and beyond, through castles, forests, seas and rocky plateau, on through hundreds of puzzles and problems and seemingly exitless rooms, past myriad sprites of people and animals and little blobby things to take on the Dark Lord once and for all...

Fairlight II is big – 128K loaded in sections on a conventional Spectrum or in one go with music on a 128K machine.

The Edge means business. Fairlight II is not for weekend adventurers. You're going to have to be up all night....

Imagine **Fairlight I,** doubled in size with a much wider variety of graphics, both in terms of background locations and sprites.

There are natural creatures like wolves (utterly convincing animation) and humans – a girl you discover early on apparently just wandering around – but in dark corners monsters of every description lurk, the most bizarre of which (that I discovered anyway) seemed to be a deadly black pudding.

Much of the first part of **Fairlight II** is set out of doors. A wooded forest with twisted trees, occasional clear sections with scattered bolders and ruined buildings. There is plenty to investigate but mostly a lot of problems requiring answers: walled up doorways, locked doors, passages that lead nowhere and the girl. She is, the Edge says enigmatically, very important. I'm none the wiser.

FACTS BOX

A stunning and epic sequal to Fairlight I with more of everything from plot to graphics. This one's a toughy

★	FAIRLIGHT II Label: The Edge
★	Author: Bo Jangeborg
★	Price: £9.95
★	Memory: 48K/128K Joysticks: various
★	Reviewer: Graham Taylor

Much is generally familiar – same control keys, same basic functions – diagonal movement, pick up, fight – some similar looking rooms to **Fairlight I.**

The concepts of weight and momentum of objects are still present, all important considerations when solving some of the Ultimatesque visual problems scattered throughout the game.

More that is new: a redesigned system of 'pockets' (five objects only held at any one time, hundreds to choose from). The world has edges where the reckless may suddenly find themselves tumbling over a sheer cliff face... The variety to the screens has been increased considerably. The use of 'part filled screens' was a noteworthy feature of Part I and here the technique is carried further – one box – like room occupies a small area of the screen barely larger than Isvar (your character) himself – it looks and even 'feels' claustrophobic.

The graphics are true' 3D. You walk 'behind' trees or parts of trees and other objects in a stunningly realistic way. Whilst there is still no scrolling between screens the 'black out' time when moving from one to the other is reduced to almost nothing.

To get from one part of the game to another you must solve certain problems. It's only possible to get to the second section in one way. Conversly, just because you do manage to get to the section it doesn't mean you have accomplished everying in Section 1. You may get half way through Part 2 before you realise that there is some other object you need or some other action you should have performed. The Edge is making no compromises with this one.

Criticisms? Very few. I have to say that I never did like the design of Isvar the central hero who always looked a little too much like a dodgy mediterranian car salesman for me, but that's hardly a major quibble.

As someone who never did solve **Fairlight I** by making **Fairlight II** even tougher, The Edge may not have frightened off a few novice players.

On the other hand the hard core will absolutely adore it and I can't say I feel differently. When can I get the cheat sheet?■



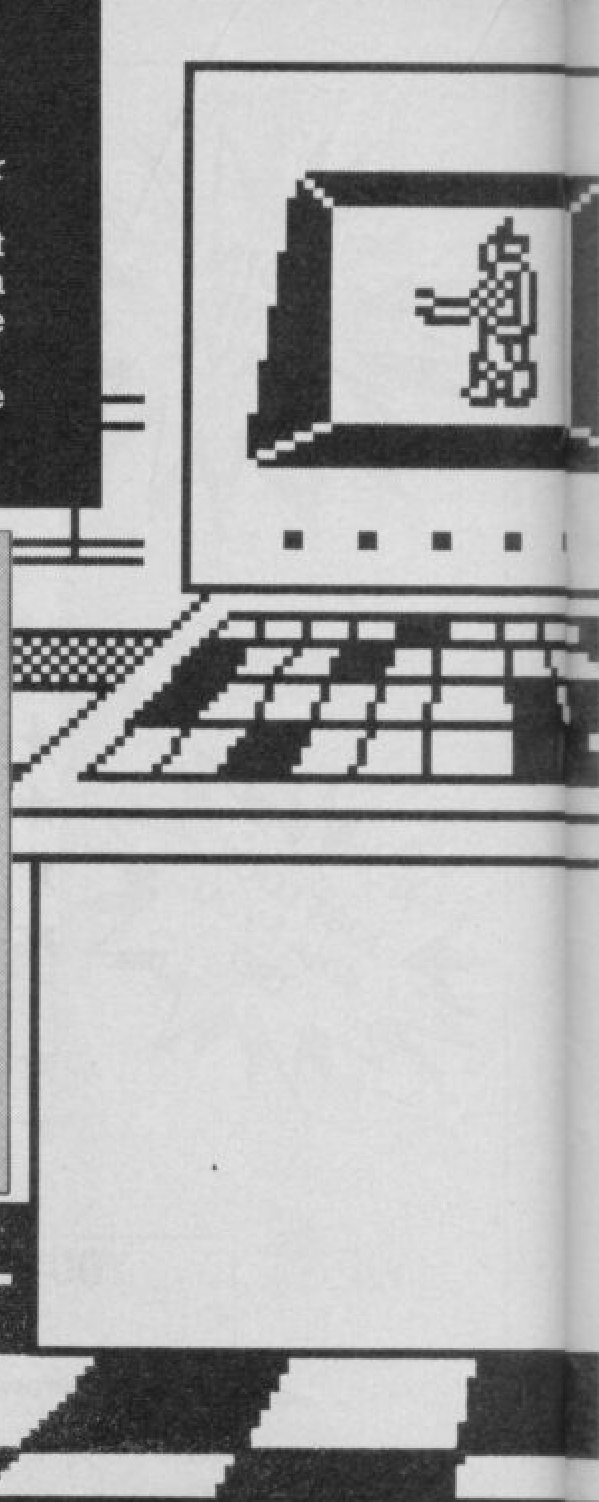


TAKING CONTROL

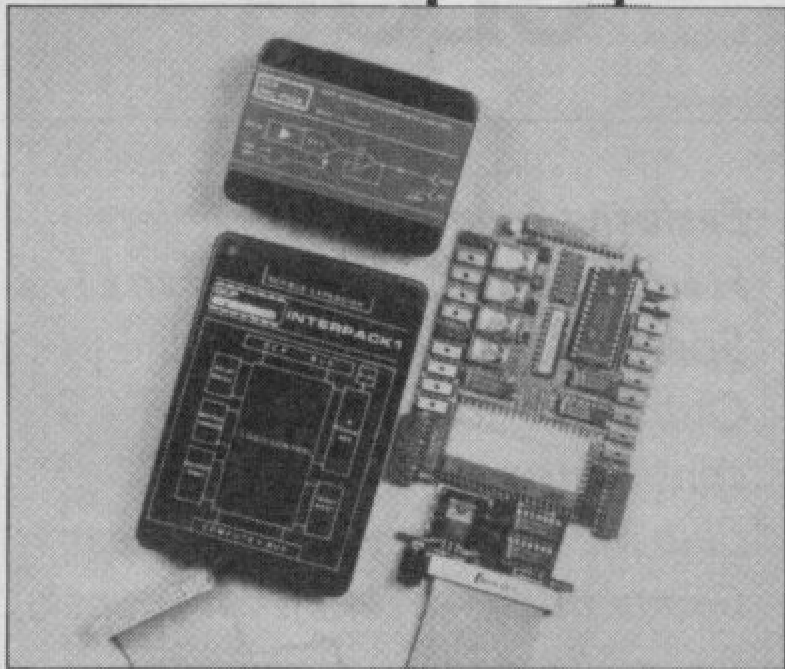
Build the house of the future, run a robotic servant, or speak to your Spectrum, all for under £150.

Those boring black interface boxes, which you swore you'd never let into the house, are powerhouses with the potential to control everything in your home that runs on electricity. Watch it switch the lights on and off, the microwave, TV or turn on an intruder alarm.

John Gilbert gives his Spectrum and QL the run of the office. We've never been the same since■



DCP Control System



Look no further than DCP for a complete control environment which can handle several external hardware devices – robots, turtles, Lego models or stepper motors – all at the same time.

The system comprises three interfaces, called Interpacks, a Spectrum interface and seven related accessories.

Interpack One is the Scientific interface. It contains both digital and analogue inputs. There is also an eight-bit TTL input port and an eight-bit TTL output. You can also get a DCP expansion which allows you to connect other interpacks.

It's called the Scientific interface because the I/O ports are well suited to situations in which measurement is important, such as gauging temperature or pressure.

The Control interface, Interpack Two, includes an eight-switch contact for digital inputs and six SPDT relays as well as the usual 15-way expansion bus for the potential growth of your interfaces. It's best used for controlling turtle-type robots, buggies and any motor controlled device which does not require precision movement.

If you want precision movement in devices such as robot arms and electronic mice, which have to find their way out of mazes, you'll need Interpack Three: The Stepper Motor. A stepper motor rotates one small step at a time so that you have more control over motion. For instance, a turtle controlled by stepper motors will negotiate difficult corners, stop in a precise position and move in an accurately reproducible way. Similarly, robot arms can pick up delicate objects because of the steady rotation of a stepper motor. Interpack Three drives up to three 12V two-phase motors using industry standard chips. It also boasts eight buffered switch contact inputs for limit switches and sensors. Again, the DCP expansion bus allows you to put other devices or interfaces on to the back of Interpack Three.

The seven DCP accessories include some nifty hardware and software solutions to control and protramming problems:

- **ADC Pack.** Fast analogue to digital convertor. Could be used to turn the motion of, say, a robot into an equivalent electronic signal
- **DAC Pack.** The converse of ADC. Provides a fast digital to analogue conversion – output from computer to external device. It's controlled by a 5V DC power supply and contains a DCP expansion bus
- **DCP Bus Intercard.** Connects one Interpack to another
- **Invertabus.** Connects two ADC or DAC packs together
- **Powerbus.** Boosts the power supply when several Interpacks are chained together at the back of your Spectrum.

The DCP range of control interfaces is one of the most powerful and comprehensive around■

DCP CONTROL
Supplier: DCP or Commotion
Prices: Interpack 1 £43.43; Interpack 2 £34.74; Interpack 3 £43.43; Spectrum Intercard £13.00; ADC Pack £21.70; DAC Pack £21.70; DCP Bus Intercard £13.00; Invertabus £4.30; Powerbus Pack £17.35.
A comprehensive and powerful set of interfaces which will tend to all your control applications needs. Just plug in your unit and away you go. Fantastic

★★★★★

Become a digital Frankenstein. Bring robots to life, command your Spectrum to monitor your houses' security system and even switch on your garden lights (!) when it gets dark.

Robotics and control is saturated with complex jargon and obscure terminology but the principles behind making any external device strapped to the back of you Spectrum work are so simple I'll bet you'll want to kick yourself.

When you type a command into your computer it's translated by the Spectrum's Rom into an electronic pulse with a particular frequency. We represent those frequencies as a range of numbers starting at zero and rising to 255. Zero represents no signal and 255 is full power. You can use this simple numeric system to control a motor, for instance. A 255 signal will start the motor while zero switches it off again.

Before you can do that though, you've got to translate those digital numeric signals into mechanical analogue movements from a robot or other control device.

That's where an I/O port – the best of which are reviewed below – comes in handy. It takes the number from the Spectrum's Ram and sends it via a lead or ribbon connector to the robot's motor. The robot contains an electronic switch which is switched to the off position when it's connected to the computer.

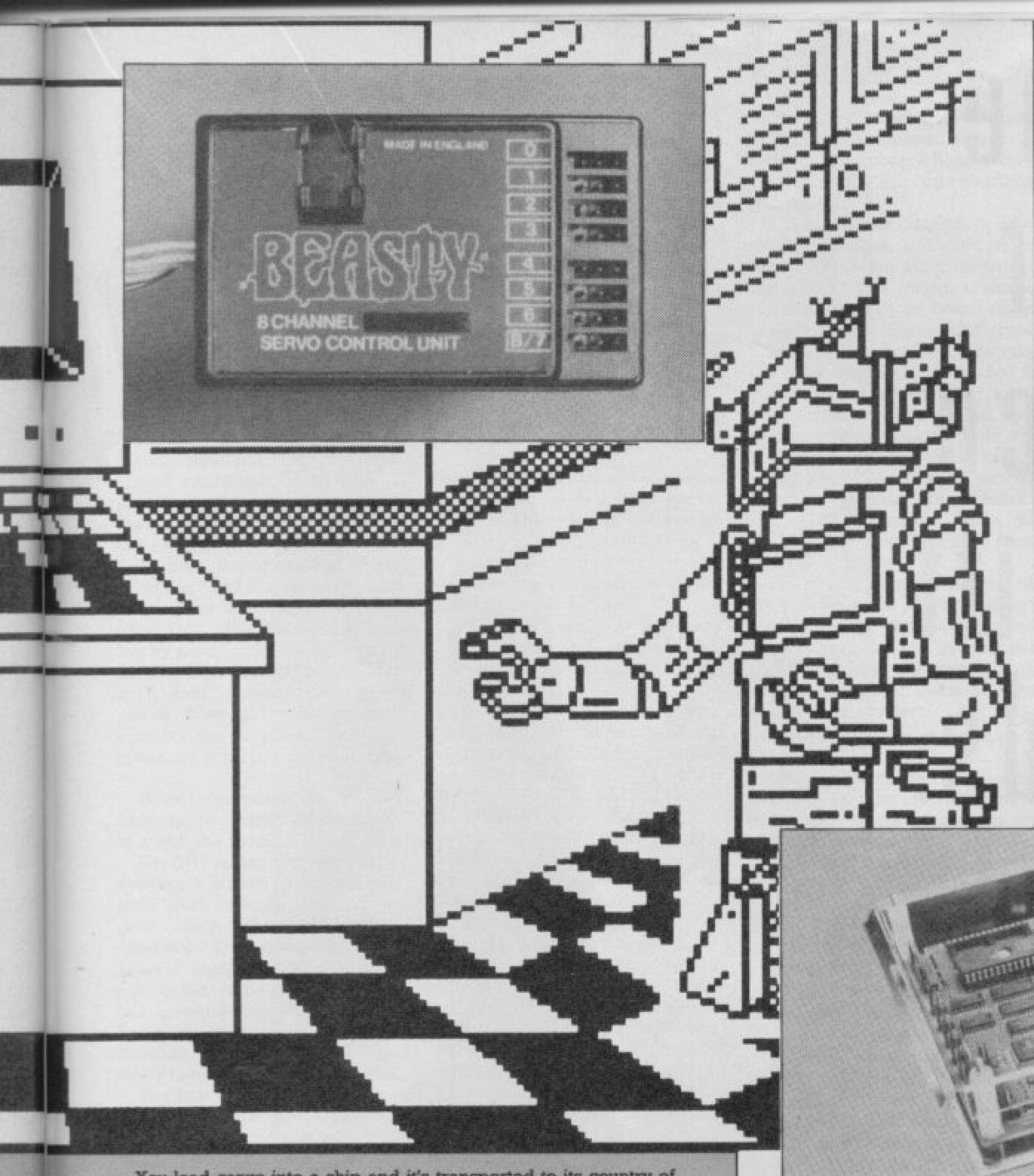
When you send your 255 signal the switch is thrown and the motor moves the robot forward. When you send a different signal, say zero, the switch is thrown again to the off position. And so on.

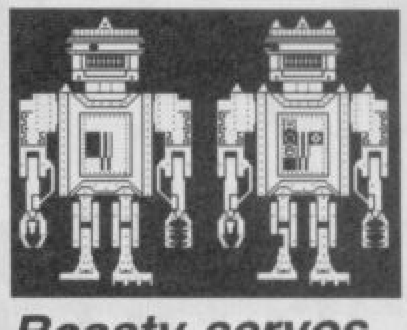
OK so you just plug in the interface and connect it to the robot using the instructions in the package, but what about this sophisticated software you'll need to drive this robot motor?

Sophisticated? No. The Spectrum has two special Basic commands which will send commands through an I/O port to a robot or read information from temperature sensors through the port: *Out* and *In*.

Out operates in a simlar way to *Poke*, but don't get alarmed. In the instructions for your interface you'll be told the port to which you should send your robot command.

A computer port is similar to a cargo port! It is, honest!!





Beasty servos

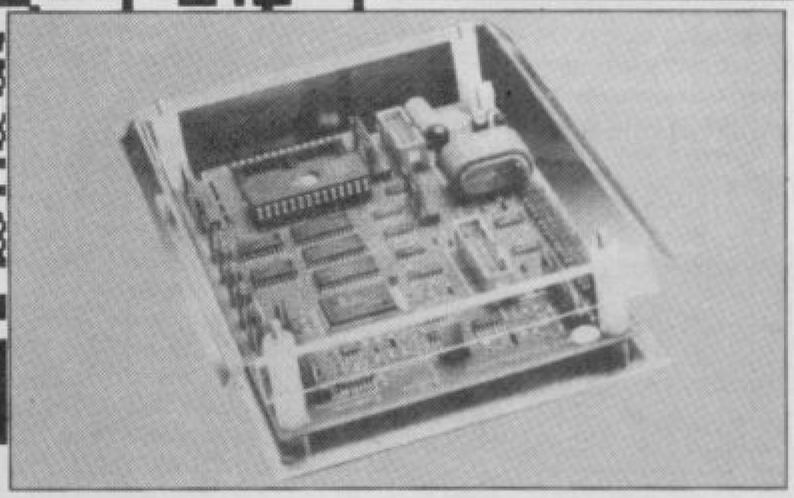
The Beasty Servo controller interface will not work on the Spectrum or QL but its standard servos can be operated by the Scorpion Controller.

Servos, also called actuators, use a small amount of mechanical power to drive often quite large mechanical devices.

It'll support 16 such servos■

BEASTY SERVOS.
Supplier: Commotion
Price: £14.35 each
Don't buy the Beasty Interface but the servos can be strapped to the Scorpion Controller to drive large mechanical arms or robots if you can find them

★★★★☆



You load cargo into a ship and it's transported to its country of destination. In the case of a computer your command is taken to a port which is labelled with a number and pushed out through the I/O interface towards the robot. For instance, the Robotek interface uses Port 63 and an 'On' signal is represented by the number 8. By typing the command *Out* 63,8 you would activate the motor on your robot because the computer has sent the 'On' command through Port 63. Similarly if you now type *Out* 63,0 the motor will stop.

Information from heat sensor or photo-electric cells can be read into the Spectrum in a similar, but reverse, process. Using the Basic *In* instruction you can get the computer to read a number contained within a port rather like *Read* reads Data. Again, the number represents a reality but in this case you are converting an analogue signal into a digital one. For instance, your Spectrum could be connected to a heat sensor and the current value it has put in to a port, say 61.

The *In* value corresponds to some physical value. So, for instance, zero could represent freezing point and 100 boiling point. A series of *If...Then* statements can be strung together with *In* in a Basic program to test the temperature reading from your heat sensor. For instance, when the instruction *If* In 61=100 is true you could ask the program to *Print* "Boilng point reached".

As you can see, you don't need machine code and you don't need complex jargon or equipment. And it's all really easy. It's simply a matter of getting your soldering irons out and following the instruction in your robot or interface kit. Manufacturers these days don't regard all potential customers as electronic whizzies. Their instructions are simple and you can come away from your experiements with a robot which you've made move or sensors which tell you if your cat's dying of frostbite on the front lawn.

Most electronics kits are easy and fun to make up. A massive range of interfaces, robots and advice can be obtained from companies such as Commotion.

Alternatively, you could start your creative electronics life with our 'Robot' *SU* buggy kit offer on page 40■

Scorpion Controller

The Scorpion Controller, unlike many of its bedmates, is intelligent and – being battery backed-up – it can be operated independently of its Spectrum host.

A CMOS microprocessor on board the black box, and a control language with the structure of Logo and speed of Basic make the device intelligent. The Scorpion's 24K battery-backed Ram means that, once it's been programmed, you can unplug the controller from the back of your Spectrum and take to your robot. Your program will be executed by the integral microprocessor until you switch off the battery.

The unit is approximately half the size of a Spectrum 128K+2, lightweight and portable. It's ideal for driving buggies and robots in areas away mains supply.

Scorpion can control up to four Beasty servo units – see separate review. It boasts four digital outputs, which can drive small DC motors or through a system of relays larger motors. An additional external driver board can be added to run six stepper motors.

Other interface links include an LCD display driver, a 20 key keypad input socket, a Phillips 12C port and a system expansion connector.

Scorpion is an all-in-one interface which you could carry around in a briefcase if need be. It's simple command language provides an entry point for beginners and its portability between different types of computer allows robots, buggies and other devices which operate on BBCs or QLs to work with your system■

SCORPION CONTROLLER
Supplier: Commotion
Price: £249.00
The only unit reviewed which was both independent and intelligent. Its control language is high level – no *Peeks* and *Pokes* required – and its portability allows you to set up devices away from home. Expensive

★★★★☆

Meet the printer interface with a gift for words.

Before you buy a printer interface, it's worth thinking ahead. One day, you'll probably want to write someone a letter. Draft an essay. Or create a report.

With RamPrint, it couldn't be simpler.

RamPrint gives you a powerful interface to the huge range of popular Centronics printers.

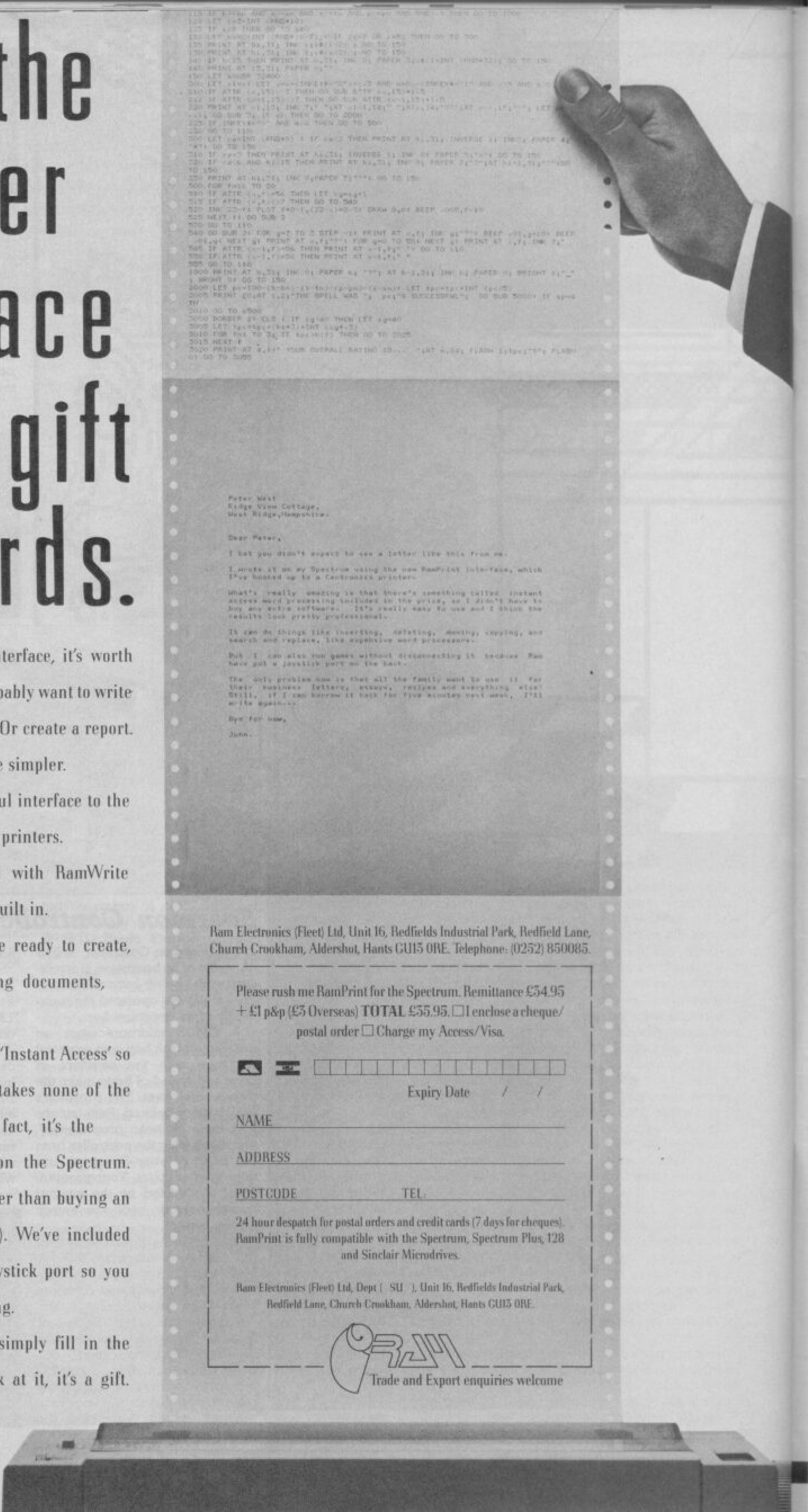
It's also the only interface with RamWrite 'Instant Access' word processing built in.

Plug in a printer and you're ready to create, edit and save professional-looking documents, quickly and easily.

The RamWrite program uses 'Instant Access' so there's no software to load, and takes none of the computer's precious memory. In fact, it's the simplest way to write a letter on the Spectrum.

The cost: just £34.95 (cheaper than buying an interface and software separately). We've included the printer cable – and even a joystick port so you can play games without unplugging.

To get your hands on one, simply fill in the coupon. Whichever way you look at it, it's a gift.



Big Ears

Big ears is a CB term for operators who listen to conversations which don't concern them. Nothing could better describe the speech recognition package from William Stuart Systems.

The package contains the SR1 speech recognition unit with connector DIN cable, a battery powered microphone and a demonstration program.

Speak into the microphone, teach Big Ears various words, and it can learn to recognise them.

Big Ears connects to the Spectrum by either the WSS Chatterbox speech synthesiser or the WSS I/O (input/output) port – a review of the latter is included elsewhere in this feature.

Big Ears only stores and recognises one word at a time and holds a maximum of six on a 48K Spectrum. First, give the word a number by which it can be identified in the Big Ears Ram dictionary and spell your chosen word. Once you've done that the program prompts you to press *Enter* and speak the word into the microphone.

When you press *Enter* you'll have approximately five seconds to speak the word.

Big Ears takes four samples of your voice of each word and translates each sample into a voice print which is an array of 36 numbers. The computer takes several samples of your voice saying the same word because, just as everybody has a different voice, so your voice is slightly different in level and inflection every time you say the same word.

The four computer voice prints are averaged to give a range of levels and inflections at which you might say a specific word.

The result is not always accurate. You may, for instance, want the computer to recognise the word 'science' but it keeps comparing it with 'psychology' which Big Ears has also learned. The reason is that you – and most other people – pronounce 'psy' and 'sci' in a similar way. Big Ears has no real auditory sense and, if there are several like – sounding syllables in certain words it has learnt it will get confused and maybe respond with the wrong word.

When you've taught the computer two or more words you can *Test* and *Demonstrate* speech recognition. Type *T*, for *Test*, if you want to see the calculations which the system does to match your word with one in its dictionary. Speak into the micrphone when prompted by the program and the correct dictionary entry should be displayed on the screen with a voice print and correlation table.

The *Demonstration* option is similar to *Test*.

Big Ears can make your computer seem intelligent.

Chatterbox can respond vocally to your spoken commands into Big Ears. Alternatively, you could use the package to control robots with



spoken commands through the I/O port. For instance, you could teach Big Ears 'left' and 'right' and write a Basic program to link those words to the movement of a floor turtle or similar robot.

Instead of typing in the word which corresponds to your spoken word you could type in a reply to a command.

For instance your spoken word could be 'up' to make a mechanical arm move up. The reply could be 'your command is being obeyed'. Type in the reply and teach the computer the word.

The Big Ears control program was written in Basic so that you can alter it, add extra lines, change the number of words the dictionary holds and pull out options that you may not require in your programs. The speech routines, however, are fully machine-coded. Instructions on how to customise the program and add routines are given in the short booklet which accompanies the package. It also includes line-by-line details of the control program so that you can adapt it to bring other devices, such as robots, security systems, or even the infamous Red Box at your beckoned call. Both Big Ears interfaces are open-ended so you can add whichever devices you require on to the back of your Spectrum and control them through the machine's ports.

For the majority of Spectrum owners, Big Ears is an expensive show-off rather than a practical show piece. It has an irritating habit of picking up background noise making it useless in any environment other than a padded cell. If you are, however, desparately seeking new things for your Spectrum, Big Ears will keep your interest for a couple of hours at least■

BIG EARS
Supplier: William Stuart Systems or Commotion
Price: £49.95 and also requires Chatterbox module or WSS I/O port,
Useful and fairly effective speech recognition unit. Will mainly be of use to the disabled, educational establishments or collectors of computer gadgetry

★★

Robotek

No bigger than one of those upright Kempston printer interfaces, the Robotek from Datel is a neat gizmo which controls robots and sensors.

It contains four outputs, to drive external devices, and eight inputs which gauge the status of sensor equipment. The output channels are controlled by on board relays using Sinclair Basic *Out* commands. Each relay has three control lines which are connected to your external device using a ribbon connector. The ribbon connection chart included with the package shows the lines through which you'll have to send instructions to activate your robot's motors. Unfortunately, since the cable is only 66cm long your robot won't get lost.

Robotek is mapped to Port 63, so if you type *Out* 63 followed by a number greater than zero the corresponding relay will be switched on. That relay will continue to operate until you issue a *Close* command using zero.

The interface also contains eight input channels, labelled A to H, which are connected to sensing switches in your robots, turtles, arms or buggies. Some simple software, not included with the device, will sense which of the lines in the device has been activated. For instance, if you place a sensor line at the front of your turtle that line would be activated if it bumped into a wall.

Robotek is simple to use but its two pages of A4 instructions leave much to be desired. Datel should provide more support for such an excellent device and back-up for existing customers. Datel does, however, recommend a book which you can buy to build Lego robots and operate them using the company's interface. It's called *Make and Program Your Own Robots* and can be obtained from Arrow books for £3.15■

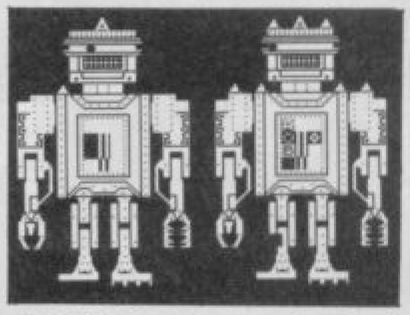
Robotek
Supplier: Datel
Price: £29.95
A good robot controller and sensing interface, but the instructions could be a good deal more enlightening

★★★★

WSS Input/ output port

An input/output port is similar to the junction box at a railway siding. It takes the mess of signals going in to and out of the Spectrum and brings a semblance of order to them.

The Spectrum can only do one action at a time. It can, for instance, send a piece of information out through its edge connector or listen for a piece of information which is expected from an external device. Your computer can't



do both jobs at once so the input/output (I/O) interface time sequences the signals which are transmitted to the Spectrum or vice versa.

That's clever and useful but no I/O interface would be worth much if it had just one channel, or port, through which data could flow. Many hardware devices, such as mechanical arms need at least two channels, one of which sends out information while the other monitors the arm's movement. The WSS I/O port has two 8-bit ports which you can program individually to accept input or output – the ports are, therefore, bi-directional.

The instruction booklet includes circuit diagrams which will allow you to connect switches, photo cells, light emitting diodes, relays, organ keyboards and stepper motors. Diagrams are hand drawn but simple enough to understand.

The WSS I/O system is an inexpensive way of turning your Spectrum into a control console. It may not look terrific and the instruction booklet does not suffer fools gladly, but it is all you need to step into the world of robotics, home security or even entertainment■

WSS I/O
Supplier: William Stuart Systems
Price: £25.50
A simple I/O port which incidentally contains a speech synthesis unit. It's inexpensive and the instruction booklet, although a bit messy, is more readable than the Datel sheets

★★★★

STOCKISTS

● William Stuart Systems, Quarley Down House, Cholderton, nr Salisbury, Wilts, SP4 0DZ.
● Commotion, 241 Green Street, Enfield, Herts
● Data Electronics, Units 8/9, Fenton Industrial Estate, Dewsbury Road, Fenton, Stoke-on-Trent.
● Arrow Books, PO Box 29, Douglas, Isle of Man

INFORMATION

● British Robot Association, 35-39 High Street, Kempston, Beds MK42 7BT
● Lego (UK), Wrexham, Clwyd LL13 7TQ – Supplies robot and motor kits, catalogue available
● Maplin Electronics, PO Box 3, Rayleigh, Essex SS6 8LR – electronics supplier

WORK-OUT

REVIEW

SETS

Mathematics. One word that strikes terror into 99% of all household pupils and promotes what I always call 'number shock' – that moment when you look at the sums on the page and . . . nothing, your brain goes blank, your heart goes into overdrive and all you can think about is how you are going to get the earth to swallow you up so you can escape.

When I took my O Levels, we didn't have computers at school – we didn't evn have calculators to use. We had our fingers of course, but, they were only good for counting in tens and twiddling with.

I used to just hate those problems that were set in an everyday situation, where you had to find the numerical answer. For instance, that old classic that went "A space-ship from Mars containing 50 small demons landed on earth. 45 of them had horns and 23 had tails but 3 of them had no horns and no tail. How many had horns and tails?"

The answer is 'who cares anyway!', but knowing you have to work it out you dutifully set to it.

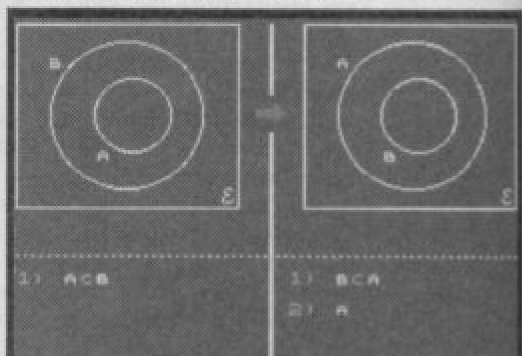
Sets is a suite of programs designed to help you understand basic maths ideas and help you solve problems similar to the above example. The ideas are based on the set theory of mathematics – an algebraic system using a series of circles and ovals called Venn diagrams (named after the English mathematician John Venn).

Venn diagrams are very useful for illustrating how sets of numbers are related to one another and the Spectrum's graphic capabilities are perfect for this type of demonstration.

The manual is very thorough and takes you slowly through the Venn system, starting with very simple examples and then gradually increasing the difficulty level, whilst always making sure you are still understanding the principles. One thing I liked about this program is its insistence than you try to work out the problems on your own first, using your own brain before the computers; so you're not totally dependant on the machine for your answers.

When you load up, you get a six-choice menu which takes you into each section of the **Set** system, from the initial setting of the co-ordinates and shading of the Venn diagrams, through to element placing and solving. It may sound complicated but if you follow the manual closely, it is blissfully easy.

One criticism I do have, is that there are three maths symbols that have to be used and the manual fails to tell you which key promotes which symbol on screen. I hope this is just an oversight on the printing and not the authors' assuming the user should know as this is not in keeping with the way the manual has been written.



▲ **Example of the system showing Venn diagrams. In this case Set B is a part of Set A (on the right)**

This aside, the program is concise and error free and for once I can sleep easy, safe in the knowledge that only 21 demons had both horns and a tail. I worked it out and I solved it using **Sets**. Not bad huh?■

FACTS BOX

Easy to understand and well presented guide to the mystic world of set theory and Venn diagrams

SETS
Label: Alpha Plus
Author: J Andrews, A McMaster
Memory: 48K/128K

Reviewer: Andy Moss

★★★☆☆

GRID, FRAME, TRUSS

There are a good number of specialist engineering programs now available for the Spectrum.

Three new packages from America are **Grid, Frame** and **Truss,** designed to aid structural engineers and the building trade in analysing the forces and displacements in these structures. (At present they are only available by mail order from S Okoloko, PO Box 3135, Ann Arbor, Michigan 48106, USA.) Prices range from $40 for one program to $110 for all three. Each cassette contains three versions for output to screen, 32-column and 80-column printers.

The programs are all effective but by today's standards very crude. Data files are created separately with line numbers and merged into the main program. The structure of the data is set out in the manual. For professionals who want to do several what/if calculations this may be the best way to approach the data entry, although I prefer the question and answer approach to entering data with an option to change any item and then recalculate. It would also have been nice to see a diagram of the structure either as part of the input or as output, although I realise that the Spectrum's graphics capabilities make this difficult.

In addition to the numeric data a short question and answer session allows the user to enter the identifying details such as the project name, place, date etc which is used to give a heading to the output.

The output itself is comprehensive and provides a full analysis, although very little attention seems to have been paid to its presentation.

Depending on your point of view the manuals could be too big or too little. Experts may find the larger number of sample questions and print-outs unnecessary while I suspect for novices there is insufficient explanation of the data preparation and interpretation of the results.

These are very specialist programs which should appeal to those engineers who already own a Spectrum and who need to carry out such calculations regularly. The market for these programs is likely to be very limited and because of this they lack the professional veneer of a commercially produced title. Nevertheless, to run their PC equivalents would be orders of magnitude more expensive■

FACTS BOX

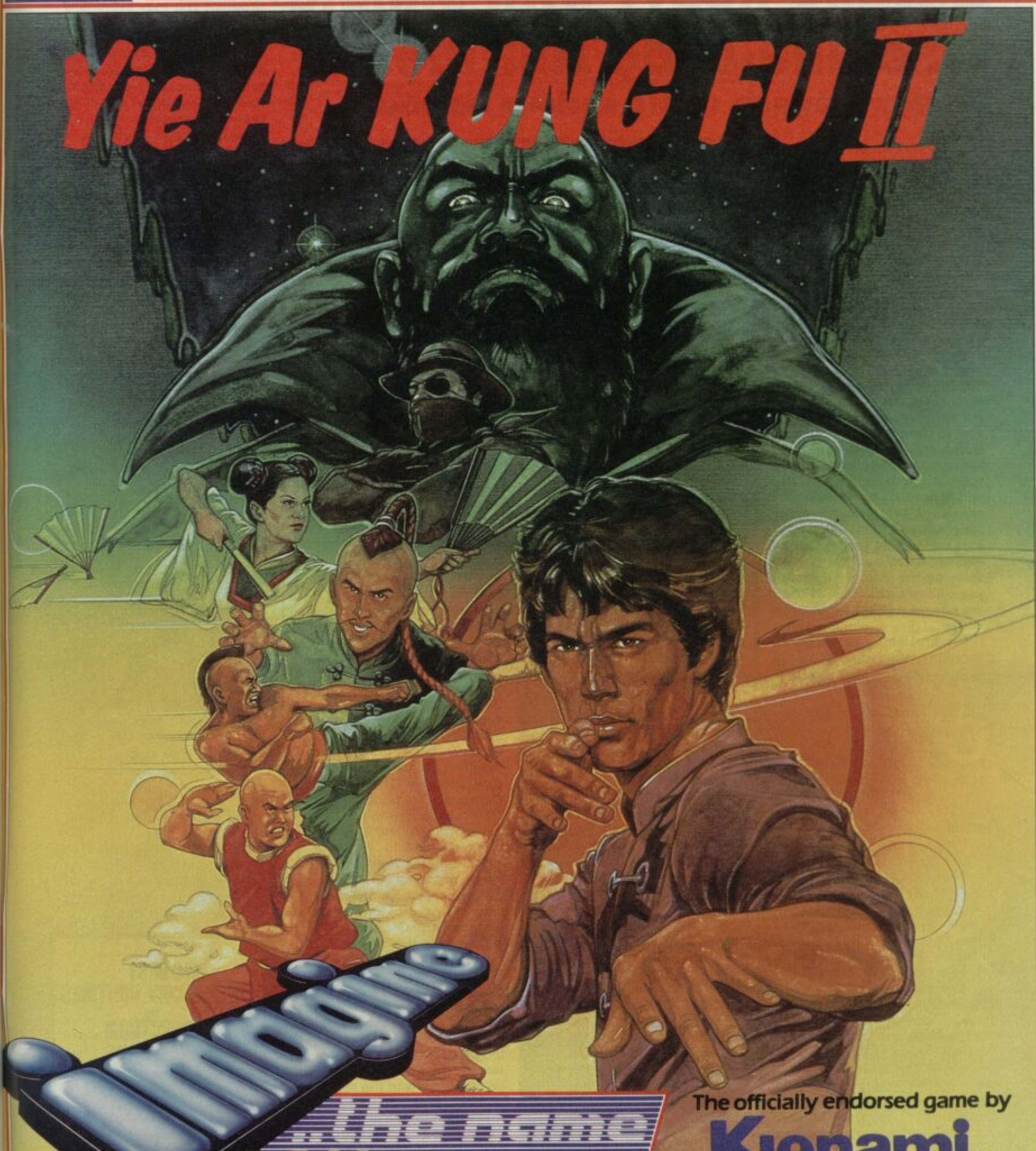
Highly specialised engineering applications programs. Lack professional veneer but cheaper than PC equivalents

GRID, FRAME, TRUSS
Label:
S Okoloku (PO Box 3135, Ann Arbor, Michigan 48106, USA)
Price: $40 – $110
Memory: 48K

Reviewer: Mike Knight

★★★★☆

AMSTRAD £8·95
ZX SPECTRUM £7·95
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Getting heavy with simple machine-code routines

Andrew Hewson deals serious numbers

Numbers figure heavily in this month's column. I've concentrated on machine-code and there are more numbers than ever before in five separate routines. Four routines to scroll the screen pixel by pixel and a routing to delete excess Basic *Return* addresses from the stack.

Taking the last routine first it was written in response to a letter from Liam MacMullan of County Wexford in Eire. Apart from sending me a copy of my first *SU* column (sorry Liam that competition finished last month) he writes: **Is there a way to clear the Spectrum *Gosub* stack? I have a fairly long program which has a lot of subroutines called by *Gosubs* and depending on prevailing conditions sometimes *Returns* are made and sometimes not. This means that the unwanted *Returns* sometimes accumulate and clog the memory. I cannot use a *Clear* instruction as there are a large number of variables in use.**

Table 1. Routine to disable Gosubs

```
Address Hex Code    Assembly        Notes
32768   F3          di              :disable interrupts
32769   21 00 00    ld hl,0
32772   39          add hl,sp
32773   54          ld d,h
32774   5D          ld e,l          :de=stack pointer
32775   2A B2 5C    ld hl,(23730)   :RAMTOP
32778   01 17 00    ld bc,23
32781   A7          and a
32782   ED 42       sbc hl,bc       :new stack position
32784   E5          push hl
32785   D5          push de         :store register pairs
32786   ED 52       sbc hl,de
32788   ED 5B 3D 5C ld de,(23613)   :ERR-SP
32792   19          add hl,de
32793   22 3D 5C    ld (23613),hl
32796   D1          pop de
32797   E1          pop hl          :restore register pairs
32798   0B          dec bc
32799   F9          ld sp,hl        :alter stack pointer
32800   09          add hl,bc
32801   2B          dec hl
32802   EB          ex de,hl
32803   09          add hl,bc
32804   2B          dec hl
32805   ED B8       lddr            :move stack up
32807   FB          ei              :re-enable interrupts
32808   C9          ret             :return to BASIC
This program is totally relocatable.
To use it, use USR (eg RANDOMIZE USR start or INPUT USR start)
The program will erase any GO SUBS stored on the GOSUB stack.
```

Tut, tut Liam! You really shouldn't write your programs so that you can jump out of a subroutine into another part of the program without going through the conventional *Return* instruction. How on earth can you expect to keep track of what it is doing? Such prorgamming practice would be frowned on in professional circles!

Having said that I refuse to be a killjoy. It's your program and you can write it how you wish. I understand your motivation. The *Gosub* facilities in Sinclair Basic are very limited. The only way to pass a branching decision made in a subroutine back to the main program is to set a variable in the routine and then test the variable in the main program. This is very clumsy so it is tempting in certain situations to jump out of the subroutine and forget about the *Return* call.

Omitting the *Return* call can have unfortunate consequences. To understand why you need to know how a *Gosub* instruction works. As is explained in the programming manual supplied with the Spectrum there is a special stack at the top of the address space of the machine where the line number and the statement number within the line to which the program is to *Return* are stored. The line number takes up two bytes and the statement number takes a third byte. To make roon for these three bytes the machine stack and the stack pointer are moved down in memory by three bytes before the data are stored.

Obviously if your program makes lots of *Gosub* calls without corresponding *Returns* the stack will gradually move down the machine eating into the spare space in memory. Normally this doesn't matter very much but if you have a big program you may eventually run out of memory while the program is executing.

The routine in Table 1 deletes any *Return* data stored at the top of memory by moving the stack back up again and altering the stack pointer correspondingly. Note that the routine disables the interrupt system before it starts and re-enables it on completion. This is to prevent the routine being interrupted half way through when the stack is in disarray. The routine also appropriately modifies the *Err_Sp* system variable which points into the stack to the address to which the system jumps when an error is detected.

I hope this helps with your *Gosub* clogging problem, Liam.

Stating the obvious Ts

Colin Rout of Hastings want to know about 't' states. Please can you explain what they are? **he writes.**

The 't' in 't states' stands for time or tick. Most readers are probably not aware that there is a crystal clock inside the Spectrum which ticks at a very high frequency (in effect it ticks approximately two million times a second). The clock is like the baton of the conductor of a large orchestra and it co-ordinates all the activities of the microprocessor.

When a particular part of the microprocessor does its job – perhaps the part which fetches the next instruction to be executed from its place in memory – it doesn't do it just when it feels like it. It waits until the next clock tick occurs before it starts.

Most of the instructions in the Z80 instruction set are made up of several steps. It is easy to see for example that ld hl, (32768) [load the hl register pair with the contents of addresses 32768 and 32769] is made up of two parts – the first part transferring the contents of 32768 to the l register and the second part transferring the contents of 32769 to the h register. Naturally such a two-part instruction takes more or less twice as long to execute as a simpler one like ld d,243 (load the d register with 243).

The number of 't states' required by an instruction is a measure of the amount of time required to execute that instruction. Typical values are 2, 3 or 4. There are two particular situations when programming the Spectrum where a detailed count of the number of t states used by a routine is necessary. The first is when writing tape loading and saving routines.

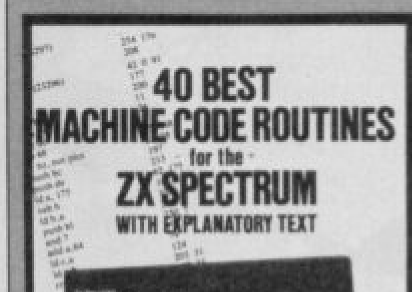
The second is when writing the screen up-dating routine in a fast moving game. Obviously the fewer the number ot t states used by the routine which plonks the graphics on the screen the more times per second the routine can be called leading to more and smoother-looking action. This is an area where I have seen programmers leap for joy when they've worked out a quicker method.

Assemblers and m/c books

I've recently been trying my hand at machine code, writes **Eoin Mcleod of Aberdeen. Can you suggest a good assembler/disassembler and a book which lists all the Z80 mnemonics and what they do and how to use them?**

There are as many Spectrum assemblers as there are software companies, probably more, and it's difficult for me to recommend any particular commercial product. In our company we use our own when we are working on the Spectrum itself. It has never been released commercially because we are always adding bits and pieces to it to improve it for particular jobs.

Old hands tend to use the Picturesque assembler because it has been around a long time and they feel comfortable with it. Others I know use the Ocean product and still others recommend the one from Oxford Computer Publishing. OCP recently went into



HEWSON HELPLINE

Demanding the pixell scrolling

Gimme a pixel scroll, demands John Lambert of Solihull. Yes, John. Right away, John, Take a look at Table 2, John.

Scrolling the screen is something which every programmer wants to do at sometime and I've lost count of the number of requests I've had for scrolling routines. Mind you I think John's request is the most peremptory.

There are four separate parts to Table 2. Routine 1 planted at addresses 32768 to 32810 scrolls up. Routine 2 (32811 to 32863) scrolls down and Routines 3 and 4 (32864 to 32881 and 32882 to 32899) scroll right and left, respectively. The only common part is the 'blank' routine at 32854 to 32863 which is used by both the up and down scrolling routines.

The up and down routines are a lot longer than the left/right routines because the Spectrum screen is laid out in a seemingly strange fashion form top to bottom. Briefly, the screen memory starts at address 16384 and this address is mapped to the top left corner of the screen. (To prove this *Poke* a number into address 16384. A broken line will appear at the top left of the screen.) The first 32 bytes of screen memory correspond to the top scan line of the screen but instead of the next 32 bytes corresponding to the next scan line the hardware skips down eight lines to the top of the next character line. This is repeated for eight character lines at which point the hardware goes back and fills in the second scan line of each character line.

The easiest way of seeing how this goes on is to load in a screen picture. Provided the *Ink* and *Paper* colours are distinct the screen will be seen to fill up scan line by scan line, each separated by eight pixels vertically, in three blocks from the top of the screen to the bottom.

The left and right scroll routines are much simpler by comparison. Each byte consists of eight bits which form the dot pattern for that byte. When rotated to left or right the end bit is stored in the carry flag and then the carry flag is rotated into the next byte. In this way a whole line is scrolled. The carry flag is reset at the beginning of a line to create a blank gap along one side.

Table 2. Pixel scroll: left, right, up, down

```
Add   Dec        Hex             Assembly
                                 org 32768
32768 33.0.64    21 00 40 SCR_UP ld hl.16384   :Start of the
32771 6.191      06 BF           ld b.191       screen.
32773 197        C5       LOOP1  push bc
32774 229        E5              push hl
32775 209        D1              pop de
32776 36         24       DN_SCN inc h         :Move hl down a
32777 124        7C              ld a.h         scan
32778 230.248    E6 F8           and 248
32780 188        BC              cp h
32781 32.16      20 10           jr nz.NEX
32783 6.8        06 08           ld b.8
32785 144        90              sub b
32786 31         1F              rra
32787 31         1F              rra
32788 31         1F              rra
32789 103        67              ld h.a
32790 1.32.0     01 20 00        ld bc.32
32793 9          09              add hl.bc
32794 124        7C              ld a.h
32795 23         17              rla
32796 23         17              rla
32797 23         17              rla
32798 103        67              ld h.a
32799 229        E5       NEX    push hl       :Move line up
32800 1.32.0     01 20 00        ld bc.32
32803 237.176    ED B0           ldir
32805 225        E1              pop hl
32806 193        C1              pop bc
32807 16.220     10 DC           djnz LOOP1
32809 24.43      18 2B           jr BLANK      :Blank last line
                                 org 32811
32811 33.224.87  21 E0 57 DN_SCR ld hl.22496 :Bottom line of
32814 6.191      06 BF           ld b.191       screen
32816 197        C5       LOOP2  push bc
32817 229        E5              push hl
32818 209        D1              pop de
32819 124        7C       UP_SCN ld a.h        :Move hl up a scan
32820 230.248    E6 F8           and 248
32822 188        BC              cp h
32823 40.3       28 03           jr z.LINE
32825 37         25              dec h
32826 24.16      18 10           jr NEX2
32828 14.7       0E 07    LINE   ld c.7
32830 129        81              add a.c
32831 31         1F              rra
32832 31         1F              rra
32833 31         1F              rra
32834 103        67              ld h.a
32835 1.224.255  01 E0 FF        ld bc.65504
32838 9          09              add hl.bc
32839 124        7C              ld a.h
32840 23         17              rla
32841 23         17              rla
32842 23         17              rla
32843 103        67              ld h.a
32844 229        E5       NEX2   push hl       :Move line down
32845 1.32.0     01 20 00        ld bc.32
32848 237.176    ED B0           ldir
32850 225        E1              pop hl
32851 193        C1              pop bc
32852 16.218     10 DA           djnz LOOP2
32854 54.0       36 00    BLANK  ld (hl).0     :Blank out last
32856 229        E5              push hl        line
32857 209        D1              pop de
32858 19         13              inc de
32859 14.31      0E 1F           ld c.31
32861 237.176    ED B0           ldir
32863 201        C9              ret           :Return (to BASIC)
                                 org 32864
32864 33.0.64    21 00 40 SCR_RT ld hl.16834 :Start of screen
32867 6.192      06 C0           ld b.192      :No of rows
32869 197        C5       LOOP3  push bc
32870 167        A7              and a         :Reset carry flag
32871 6.32       06 20           ld b.32        for leftmost col.
32873 203.30     CB 1E    LOOP4  rr (hl)       :Rotate byte right
32875 35         23              inc hl
32876 16.251     10 FB           djnz LOOP4
32878 193        C1              pop bc
32879 16.244     10 F4           djnz LOOP3
32881 201        C9              ret           :Return (to BASIC)
                                 org 32882
32882 33.255.87  21 FF 57 SCR_LF ld hl.22527 :End of screen
32885 6.192      06 C0           ld b.192      :No of rows
32887 197        C5       LOOP5  push bc
32888 167        A7              and a         :Reset carry flag
32889 6.32       06 20           ld b.32
32891 203.22     CB 16    LOOP6  rl (hl)       :Rotate byte left
32893 43         2B              dec hl
32894 16.251     10 FB           djnz LOOP6
32896 193        C1              pop bc
32897 16.244     10 F4           djnz LOOP5
32899 201        C9              ret           :Return (to BASIC)
```

Scrolling the screen up is achieved by using 'USR 32768', and down uses 'USR 32811'. To scroll right use 'USR 32864' and to scroll left use 'USR 32882'.

liquidation but I understand the product is still on the market. One programmer of my acquaintance has gone to the trouble of adapting and upgrading the OCP assembler for his own particular machine and disc drive combination.

On the subject of books the choice is wide. The editor may allow me a plug (he did – Ed) for *40 Best Machine Code Routines for the ZX Spectrum* which I wrote with John Hardman. It aims to get you going by explaining the instruction set and illustrating it with longer versions of the kind of routines which appear in this column. I am sending a copy to Eoin. I hope he likes it.

Many people have found *Mastering Machine Code* by Toni Baker invaluable so you might like to look at that one. *Spectrum Machine Language for the Absolute Beginner* by Ian Logan is very readable and for reference get a copy of his *The Complete Spectrum Rom Disassembly.*
The real professional's bible is *How to Program the Z80* by Rodney Zaks. It's a formidable doorstep running to more than six hundred pages and is definitely not in the light-hearted bedtime reading category. Nevertheless if you are really serious than you must have a copy. No matter how much you learn about the Z80 there is always one more thing you need to know and Zaks is almost certainly the place you'll find it.

A rather more readable account is contained in *Z80 and 8080 Assembly Language Programming* by Kathe Spracklen. The book starts at a fairly elementary level and covers the more important software aspects without gong into the hardware structure in the manner of Zaks.

Icon a classic

Our lucky program winner this month is James Kelleher of Dublin. He has asked a whole stack of questions most of which I have dealt with in the past except for this little gem: What do you mean when you say a program is icon controlled?

It's nothing special James. Icon is just a fancy word for a little picture. I am informed that the word came originally from the Russian language which surprises me but sounds daft enough to be true. It refers to the small religious pictures that you sometimes see hanging on wall in people's homes. The word has been taken over in the computer world to refer to the little pictures used in some programs to control what it going on.

We have used the trick in our new arcade release, Firelord, and I am sending a copy to James so he can see how it works. At various stages in the game you move a pretty cursor around using a joysick or cursor keys to indicate what objects you'd be prepared to swap. Then press *Fire* and it happens.

TOOL-KIT

```
ORG     60000
LOAD    60000
LD      IX,(23563)
LD      E,(IX+4)
LD      D,(IX+12)
LD      C,(IX+20)
LD      B,(IX+28)
LD      A,(IX+36)
PUSH    AF
```

REVIEW

BORING OLD FONT

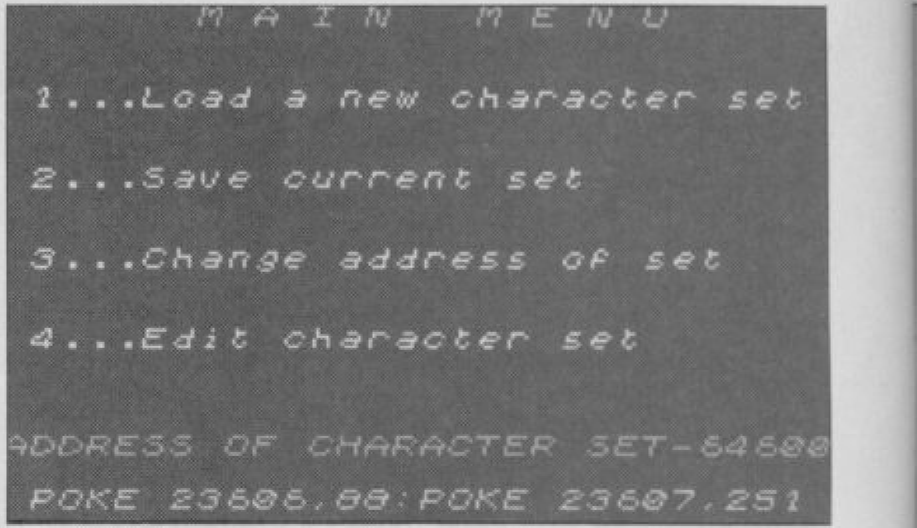
FACTS BOX

Easy, interesting utility designed to slot easily into any program. A change of font can do wonders

BORING SINCLAIR FONT
Label: 5th Dimension
21 St Mary's Way, Aldridge, Walsall, W.Midlands
Price: £1.99

Reviewer: Andy Moss

★★★☆☆

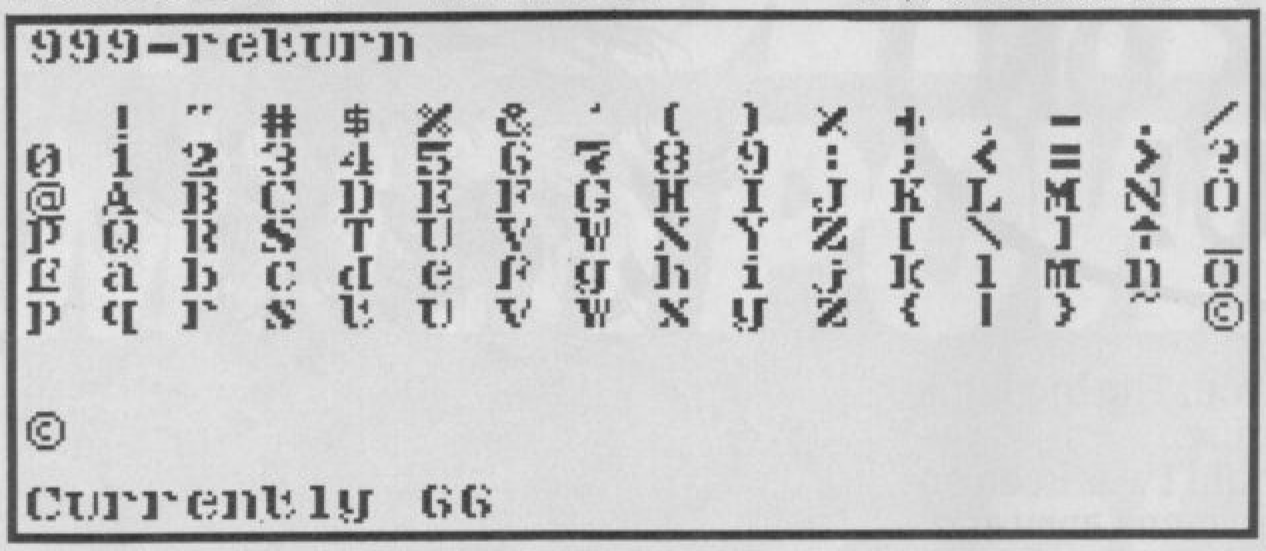


How often have you dabbled about with your Spectrum, maybe tried writing your own **Quill** Adventure or designing a Basic or machine-code program and been pleased with the results but disappointed with its presentation.

It's all down to that standard Sinclair character set – it's just plain ordinary.

With this first release from new boys 5th Dimension, you can dress up your character set in either one of 23 different fonts, or design your own.

Once loaded (it is in fact quite a short program) you get a menu which lets you either *Load* in a pre-set font, redefine it, or *Load/Save* a new one. Having viewed all the ready-made fonts I have to say that a lot of them are just variations on a theme, ie big and fat, small and fat, big and thin, small and thin, etc. There were two that I found very attractive – italics and army-style chunky.



Defining your own type is reasonably painless and is based around using a grid of 8 x 8 squares, and the combination of on/off pixel plotting. When prompted all you do is enter the number for each row in turn in either binary or decimal. It would have been a nice touch, if instead of using graph paper as the authors suggest, you could use the graphic facilities of the computer and have a graph on screen with a mobile cursor to plot the pixel – but, there you go. Once you've defined your new font style, move it to the address you need and save it using the menu and, of course, to cassette.

Tired of the Boring Sinclair Font is a pleasant utility using just 3/4K.

At the moment the program is only available via mail order■

THE PRESS

FACTS BOX

*Another example of Gilsoft genius. The Press text compressor completes the **Quill** system brilliantly*

Label: Gilsoft
Author: Phil Wade
Price: £6.95
Memory: 48K/128K

Reviewer: John Gilbert

★★★★★

Put the squeeze on your **Quill** adventure databases with yet another addition to the Gilsoft adventure generator stable.

The main function of **The Press** is to compact and compile the code created by **Quill** or **Illustrator** so that you can put more text and graphics into your games – 48K worth.

There are two compilation modes. The first, compile and compress, generates the code for an adventure and compresses that code simultaneously. It can be used by loading **The Press** into memory on its own and loading the **Quill** database. Once the database has been loaded select 'fast' or 'slow' compression. Fast can take up to an hour to do its work while slow crunches code ten times more slowly.

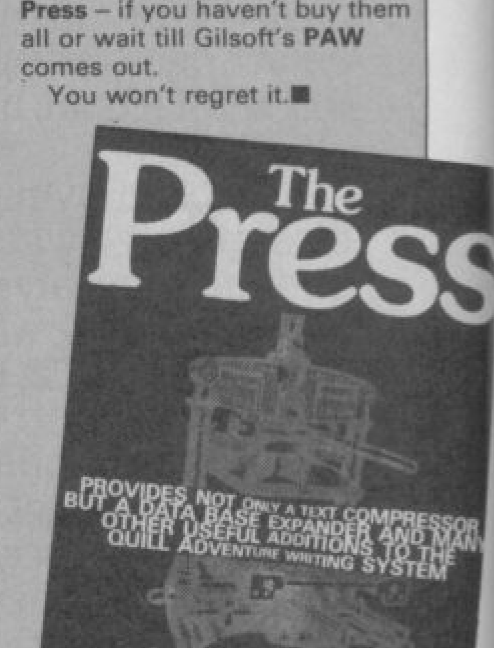
Alternatively you can use the utility in conjunction with **Quill**. Load **The Press** into **Quill** using the *Load Database* option. Compile the code using the in-built **Quill** commands and select *Use Dictionary* from **The Press.** It'll compress code in one to two minutes.

The Press package also contains a utility called **Expander,** which works on text-only adventures. It compiles and compresses your code so that you can continually add locations and messages to it on-line. **Expander** optimises your adventure code and can make room for up to 11K more code. **The Press** also adds several new facilities to your adventures. You can now switch between graphics and text-only mode, use a Ram disc, and switch between two user-defined character sets at any point during a game.

A pre-defined set of sound effects can be accessed using some of the 23 utility routines within **The Press.** Each routine – numbered between zero and 23 is set up by entering its number into a status file within memory. You can create sound effects such as telephones, electric shocks and white noise, *crash* the computer, *Pause,* increase the number of objects a player can carry and even change the click of the keyboard into a *Beep.*

The Press puts the 'super' into an already fabulous system of adventure writing utilities. It is the final brick in a professional quality programming system. If you already have **Quill, Illustrator** and **Patch,** go out and buy **The Press** – if you haven't buy them all or wait till Gilsoft's **PAW** comes out.

You won't regret it.■



SOS DISTRESS

ANDREW JACKSON

SOS Distress is a clever little program, and no mistake! If ever you've wanted to send encrypted messages across the dining-room table, to your pal, without mum or dad or son or daughter hearing, this program will solve your problems.

Simply type in whatever message you want, and the Spectrum will translate it into either audible beeps or visible dots and dashes. Amazing, eh? Dit, dit, dit...

```
  10 LET a$=" ": LET beep1=.04:
LET beep2=.09: LET pitch=25: LET
 pause=1:
  20 BORDER 6: PAPER 6: INK 0: C
LS
  30 PRINT  INVERSE 1;"M O R S E
                    "
  40 PRINT : PRINT  BRIGHT 1; PA
PER 7; INVERSE 1;"Written by And
rew Jackson        "
  60 PRINT AT 10,0;"PRESS ANY KE
Y TO BEGIN              "
  70 PAUSE 0: CLS
  90 PRINT AT 5,0;"INPUT SENTENC
E TO BE CONVERTED  INTO MORSE"
 100 INPUT  LINE a$
 105 IF LEN a$<1 OR LEN a$>600 T
HEN  GO TO 100
 110 PRINT : PRINT a$: PRINT : P
RINT  BRIGHT 1; INK 0; FLASH 1;"
CORRECT (Y/N)": INPUT  LINE b$:
 120 IF b$="n" THEN  GO TO 80
 130 CLS
 135 PRINT  INK 1;AT 4,0;"PRESS
:-";AT 7,0;"1   To print out mor
se";AT 9,0;"2   To 'BEEP' out mo
rse"
 140 IF INKEY$="1" THEN  GO TO 5
00
 145 IF INKEY$="2" THEN  GO TO 1
50
 147 GO TO 140
 150 CLS : PRINT AT 5,0; BRIGHT
1; PAPER 0; INK 5;"LETTER
   MORSE          "
 160 PRINT AT 10,0; BRIGHT 1; PA
PER 0; INK 5;"FULL SENTENCE
               ": PRINT : PRINT a
$
 170 FOR a=1 TO LEN a$: RESTORE
300
 180 FOR b=1 TO 39
 185 READ b$,c$
 190 IF a$(a)=b$ THEN  GO SUB 10
00
 200 NEXT b
 210 NEXT a
 220 PAUSE 0: GO TO 10
 300 DATA "a",".-","b","-...","c
","-.-."," "," ","d","-..","e","
.","f","..-.","g","--.","h","...
.","i","..","j",".---","k","-.-"
,"l",".-..","m","--","n","-.","o
","---","p",".--.","q","--.-","r
",".-.","s","...","t","-","u",".
.-","v","...-","w",".--","x","-.
.-","y","-.--","z","--.."
 310 DATA ".",".-.-.-","?","..--
.."
 320 DATA "1",".----","2","..---
","3","...--","4","....-","5",".
....","6","-....","7","--...","8
","---..","9","----.","0","-----
"
 500 CLS : PRINT AT 0,0;: RESTOR
E 300
 510 FOR a=1 TO LEN a$: RESTORE
300
 520 FOR b=1 TO 39
 530 READ c$,d$
 540 IF a$(a)=c$ THEN  PRINT d$;
" ";: IF a<LEN a$ THEN  NEXT a
 550 NEXT b: NEXT a
 600 PRINT )1;"c to copy"
 610 PAUSE 0
 620 IF INKEY$="c" THEN  COPY
 630 GO TO 1
1000 PRINT AT 7,0;b$;" ";AT 7,16
;c$;"      "
1005 FOR d=1 TO LEN c$:
1010 IF c$(d)="." THEN  BEEP bee
p1,pitch
1015 PAUSE pause
1020 IF c$(d)="-" THEN  BEEP bee
p2,pitch
1025 PAUSE pause
1030 NEXT d
1050 RESTORE 300: GO TO 210
```

BACK TO FONT

MICHAEL SMITH

How many times, dear reader, do you find yourself pondering the advantages of being able to make up your own entire character set? A lot, I'll wager. Well, don't say that we don't give you exactly what you want at Sinclair User! This remarkably friendly utility does just about everything. Go on, get going! You never liked the Sinclair type anyway did you?

```
  10 REM ***FONT DESIGNER***
  20 BORDER 1: PAPER 1: INK 7: B
RIGHT 0
  30 GO SUB 8000
  40 PRINT AT 4,14;"MENU"
  50 PRINT AT 8,9;"1 CREATE FONT
S"
  60 PRINT AT 10,9;"2 READ FONTS
"
  70 PRINT AT 12,9;"3 SAVE FONTS
"
  80 PRINT AT 14,9;"4 LOAD FONTS
"
 100 PRINT AT 16,9;"5 INSTRUCTIO
NS"
 110 PRINT AT 21,10;"BY R.MARSDE
N"
 120 PAUSE 0
 130 LET x=CODE INKEY$
 140 IF x<49 OR x>53 THEN  GO TO
 120
 150 GO SUB 1000*(x-48)
 160 GO TO 10
1000 REM CREATE FONTS
1010 GO SUB 8000
1015 FOR f=4 TO 13
1020 PRINT  PAPER 2;AT f,11;"
     "
1025 NEXT f
1030 PRINT AT 15,8;"Use CURSOR K
EYS";AT 16,7;"to control CURSOR"
;AT 17,9;"0 to set point";AT 18,
8;"ENTER to finish"
1031 PRINT AT 20,6;"
      "
1032 PRINT AT 19,2;"TYPE ""END""
 TO RETURN TO MENU"
1035 PRINT  INK 5; FLASH 1;AT 21
,2;" SELECT CHARACTER TO CREATE
"
1040 INPUT  LINE l$
1041 IF l$="END" OR l$="end" THE
N  GO TO 10
1045 LET l=CODE l$
1050 IF l<32 OR,l>127 THEN  GO T
O 1040
1051 PRINT AT 19,2;"
                    "
1055 PRINT AT 21,2;"
                    "
1060 PRINT AT 20,6;"CHARACTER TO
 CREATE"
1065 PRINT  PAPER 7; INK 0;AT 21
,15;CHR$ l
1070 FOR f=5 TO 12
1075 PRINT AT f,6;"0  "
1080 NEXT f
1085 PRINT  PAPER 0;AT 6,25;" "
1090 PRINT  PAPER 7; INK 0;AT 11
,25;" "
1095 FOR f=5 TO 12
1100 PRINT  PAPER 6;AT f,12;"
     "
1105 NEXT f
1110 FOR f=5 TO 12 STEP 2
1115 FOR g=12 TO 18 STEP 2
1120 PRINT  PAPER 6; BRIGHT 1;AT
 f,g;" "
1125 NEXT g
1130 FOR g=13 TO 19 STEP 2
1135 PRINT  PAPER 6; BRIGHT 1;AT
 f+1,g;" "
1140 NEXT g
1145 NEXT f
1150 DIM a(8): DIM b(1,8): LET x
=5: LET x1=5: LET y=12: LET y1=1
2
1151 RESTORE 1152: FOR f=1 TO 8:
 READ g: LET a(f)=g: NEXT f
1152 DATA 128,64,32,16,8,4,2,1
1153 FOR f=0 TO 7
1154 POKE add+((l-32)*8)+f,0
1155 NEXT f
1159 BRIGHT 8
1160 PRINT  INK 3; PAPER 3; OVER
 1;AT x,y;" "
1165 LET y1=y1+(INKEY$="8" AND y
<19)-(INKEY$="5" AND y>12)
1170 LET y1=y1+(INKEY$=CHR$ 9 AN
D y<19)-(INKEY$=CHR$ 8 AND y>12)
1175 LET x1=x1+(INKEY$="6" AND x
<12)-(INKEY$="7" AND x>5)
1180 LET x1=x1+(INKEY$=CHR$ 10 A
ND x<12)-(INKEY$=CHR$ 11 AND x>5
)
```

```
1185 IF INKEY$="0" THEN  GO SUB
1210
1186 IF INKEY$=CHR$ 13 THEN  BEE
P .1,10: GO TO 1031
1190 IF SCREEN$ (x,y)="1" THEN
PRINT  INK 0; PAPER 0;AT x,y;"1"
1195 IF SCREEN$ (x,y)=" " THEN
PRINT  PAPER 6;AT x,y;" "
1200 LET x=x1: LET y=y1: GO TO 1
160
1210 LET x2=x-4: LET y2=y-11
1215 LET l2=l-32: LET x3=x-5: LE
T y3=y-12
1220 IF SCREEN$ (x,y)=" " THEN
LET b(1,x2)=b(1,x2)+a(y2): PRINT
  PAPER 3; INK 3;AT x,y;"1": GO
TO 1230
1225 IF SCREEN$ (x,y)="1" THEN
LET b(1,x2)=b(1,x2)-a(y2): PRINT
  PAPER 3;AT x,y;" "
1230 POKE add+((l-32)*8)+x3,b(1,
x2)
1235 PRINT AT x,6;b(1,x2);"  "
1240 PAPER 8: INK 8: OVER 1
1245 PLOT 200+y3,120+(7-x3)
1250 PLOT 200+y3,80+(7-x3)
1255 PAPER 1: INK 7: OVER 0
1260 BEEP .1,20
1265 RETURN
2000 REM READ FONTS
2020 GO SUB 8000
2030 PRINT AT 5,0;"This is your
new character set"
2035 PRINT '''
2040 POKE 23606,d: POKE 23607,h
2050 FOR f=32 TO 127
2060 PRINT CHR$ f;" ";
2070 NEXT f
2080 POKE 23606,0: POKE 23607,60
2090 PRINT )0; INK 4; BRIGHT 1;
FLASH 1;AT 0,9;" PRESS A KEY "
2100 PRINT )0;AT 1,0;"1 COPY";AT
 1,26;"2 EXIT"
2110 IF INKEY$="1" THEN  PRINT )
0;AT 0,0;"


                 ": COPY : GO TO 2090
2120 IF INKEY$="2" THEN  RETURN
2130 GO TO 2110
3000 REM SAVE FONTS
3010 GO SUB 8000
3020 PRINT  BRIGHT 1;AT 9,10;"SA
VING MODE"
3030 INPUT "ENTER FILENAME:"; LI
NE f$
3040 IF f$="" OR LEN f$>10 THEN
 GO TO 3030
3050 INPUT "ENTER STARTING ADDRE
SS:";add
3060 IF add<32768 OR add>64765 T
HEN  GO TO 3050
3061 LET h=INT ((add-256)/256):
LET d=(add-256)-256*h
3070 CLS
3080 PRINT "FILENAME : ";f$
3090 PRINT "ADDRESS : ";add
3100 PRINT "LENGTH : 770"
3110 PRINT '"TO USE THE NEW CHAR
ACTER SET USE"
3120 PRINT '"POKE 23606,";d
3130 PRINT "POKE 23607,";h
3140 PRINT '"TO USE THE NORMAL C
HARACTER SET"
3150 PRINT '"POKE 23606,0"
3160 PRINT "POKE 23607,60"
3170 PRINT '"TO LOAD THE CHARACT
ER SET USE"
3180 PRINT '"CLEAR ";add-1
3190 PRINT "LOAD """;f$;"""CODE
";add
3200 PRINT '"TO SAVE THE CHARACT
ER SET USE"
3210 PRINT '"SAVE ""name""CODE "
;add;",770"
3220 IF add=add1 THEN  GO TO 333
0
3230 PRINT )0; INK 5; BRIGHT 1;
FLASH 1;AT 1,7;" TRANSFERING DAT
A "
3240 DIM a(154): LET b=0: LET b1
=0
3245 FOR g=1 TO 5
3250 FOR f=1 TO 154
3255 LET a(f)=PEEK (add1+b)
3256 LET b=b+1
3260 NEXT f
3265 FOR f=1 TO 154
3266 PRINT )0;AT 1,0;b1
3270 POKE add+b1,a(f)
3271 LET b1=b1+1
3275 NEXT f
3280 NEXT g
3290 LET add1=add
3319 PRINT )0;AT 1,0;"
                                "
3320 BEEP 1,10
3330 PRINT )0; INK 4; BRIGHT 1;
FLASH 1;AT 0,9;" PRESS A KEY "
3340 PRINT )0;AT 1,0;"1 COPY";AT
 1,26;"2 SAVE"
3350 IF INKEY$="1" THEN  PRINT )
0;AT 0,0;"


                 ": COPY : GO TO 3330
3360 IF INKEY$="2" THEN  GO TO 3
380
3370 GO TO 3350
3380 CLS
3390 PRINT AT 8,13;"SAVING"
3400 LET x=INT (16-(LEN f$/2))
3410 PRINT  INVERSE 1;AT 10,x;f$
3420 SAVE f$CODE add,770
3430 CLS
3440 PRINT AT 8,10;"VERIFY (Y/N)
"
3450 IF INKEY$="y" OR INKEY$="Y"
 THEN  GO TO 3480
3460 IF INKEY$="n" OR INKEY$="N"
 THEN  RETURN
3470 GO TO 3450
3480 CLS
3490 PRINT  FLASH 1;AT 6,4;"REWI
ND AND PLAY THE TAPE"
3500 PRINT '''''
3510 VERIFY F$CODE
3520 RETURN
4000 REM LOAD FONTS
4010 GO SUB 8000
4020 PRINT  BRIGHT 1;AT 9,10;"LO
ADING MODE"
4030 INPUT "ENTER FILENAME:"; LI
NE f$
4040 IF LEN f$>10 THEN  GO TO 40
30
4050 PRINT  INK 2; PAPER 7; BRIG
HT 1; FLASH 1;AT 21,9;" PLAY THE
 TAPE "
4055 BRIGHT 1
4060 PRINT AT 14,0;
4070 LOAD F$CODE add,770
4080 RETURN
5000 REM INSTRUCTIONS
5010 GO SUB 5020: GO TO 5055
5020 CLS : PRINT  BRIGHT 1;AT 0,
10;"INSTRUCTIONS"
5030 RETURN
5040 PRINT )0; BRIGHT 1;AT 1,10;
"PRESS A KEY"
5050 PAUSE 0: BEEP .2,20: RETURN

5055 PRINT AT 5,0;"  FONT DESIGN
ER is a utility    program.It en
ables you create a new charcter
set for the        SPECTRUM,whic
h when used in yourown programs
can look quite      effective."
5056 PRINT '"  The FONTS can als
o be used as an extended UDG set
."
5057 GO SUB 5040: GO SUB 5020
5060 PRINT  BRIGHT 1;AT 4,0;"CRE
ATE FONTS"
5070 PRINT '"  First you are ask
ed to enter  the character you w
ish to CREATE.For this a table o
f the       SPECTRUM'S characte
r set would  be useful,as you on
ly need to   enter charcters wit
h codes from 32 to 127 (the ""SP
ACE""charcter  to the """ char
acter)."
5080 PRINT '"  When you have don
e that you   can then start to d
esign your   your character on t
he 8x8 grid."
5090 GO SUB 5040: GO SUB 5020
```

TREE BUILDER

PAUL HANLON

After our Fractals Feature in the September issue, we thought you would be interested to see this and try some for yourself. The program — as you'd expect — is very short, and very easy to use

```
   1 INK 0: PAPER 7: BORDER 7: C
LS
  10 INPUT "Percentage of comple
tion on leftside of tree
          (suggest 60 TO 100)
  ";p1: INPUT "Percentage of com
pletion on      right side of tre
e          (suggest 60 TO 10
0)   ";p2
  20 INPUT "length of 'trunk'
          (suggest 10 TO 30)
  ";l1: INPUT "length of 'twigs'
          (suggest 2 TO 5)
  ";l2
  30 INPUT "number of steps
          (suggest 2-12)    ";s
  40 INPUT "number of branches p
er step      (suggest 2 OR 3)    "
;b
  50 INPUT "angle between branch
es (1-90)",angle: LET angle=angl
e/180*PI
  60 INPUT "X origin of 'tree' (
0 TO 255) ";x
  70 INPUT "Y origin of 'tree' (
0 TO 175) ";y
  80 PLOT x,y: DRAW 0,l1
  90 FOR q=INT ((b^s-1)/2-(p1/10
0*((b^s-1)/2))) TO INT ((b^s-1)/
2+(p2/100*((b^s-1)/2)))
 100 LET drang=0
 110 PLOT x,y+l1
 120 LET d=q
 130 DIM h(s)
 140 FOR n=1 TO s
 150 LET a=b^(s-n)
 160 LET h(n)=INT (d/a+.00001)
 170 LET d=d-h(n)*a
 180 LET drang=drang+(-((b-1)*an
gle/2))+h(n)*angle
 190 DRAW SIN drang*(l1-((l1-l2)
/s*n)),COS drang*(l1-((l1-l2)/s*
n))
 200 NEXT n: NEXT q
```

SINCLAIR USER

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Tight as we are, we've got a little deal that's really going to make your palms sweat. Those kind people at Firebird are allowing you to have two of their Hot Range games completeley FREE if you take out a subscription to the new-look *Sinclair User*.

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- **Vectron 3D** ☐
- **Rasputin** ☐
- **Costa Capers** ☐
- **Runestone** ☐

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I enclose a cheque for

		tick box
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(Surface) Rest of World	£35	☐
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Please debit my Access/Visa Account

Amount £ __________ Number __________
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Please make cheques payable to: SINCLAIR USER
Return to Carl Dunne, FIREBIRD OFFER, Sinclair User Subs, Mag Services, EMAP, 30-32 Farringdon Lane, London EC1R 3AU

GERRY THE GERM — GOES BODY POPPIN'

This novel little game could alternatively be titled Gerry the Germ goes mad in the Taj Mahal Indian takeaway, as he appears to have the same effect on your body as a chicken vindaloo.

Imagine you are a parasite, aka Gerry the Germ, boastful bug extraordinaire. Your mission is to get to the heart, from whence you can become virulent virus of the year. Before you can get there you need to go where no man has gone before, the lungs, kidneys, bladder, stomach and pancreas. If you get this far (and you'd be a healthier man than me) you can claim your prize.

VECTRON — 3D

Tearing down the corridors of a totally unknown dimension you wonder 'Is this it?...' Screaming towards electronic killing machines of immeasurable power you can only survive by zapping with your UD cannon and flicking on your shields. You need to find the Rom Robot, destroy it and make your escape... but your map has been destroyed. Let your wits, and adrenalin lead you... Can you find your exit? Will you fall foul of the enemy fighters? Have you the nerve? Is this it?... Well is it?

RASPUTIN

You remember Rasputin. Boney M did a song about him R.. R... R..... R. Rasputin, pervy old priest who came from East. R... R... R... Rasputin, feared cause he had an extremely long beard. Ah! They don't write songs like that anymore. But they do write extremely good games.

Guide Ivan Kosmovichski on his quest to destroy the Jewel of the Seven Planets — the power source of the evil spirit of Rasputin. Armed with a magic sword and shield, you'll journey through the dark and dangerous netherworld in this graphic adventure.

COSTA CAPERS

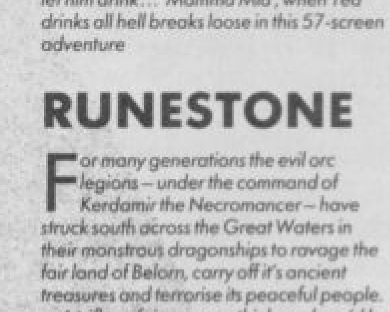
Life in the Chip Factory has become unbearable for Ted. It was probably the introduction of these horrible oven ones that taste like crisps left out in the rain, sat on and... anyway, back to the story.

Ted says 'Adios, factory!' and sets out for Espana. Immediately his luggage goes astray, including his money. So it's all down to you to make sure he enjoys his hols. Find his camera, then his credit card, but don't let him drink... 'Mamma Mia', when Ted drinks all hell breaks loose in this 57-screen adventure

RUNESTONE

For many generations the evil orc legions — under the command of Kerdamir the Necromancer — have struck south across the Great Waters in their monstrous dragonships to ravage the fair land of Belorn, carry off it's ancient treasures and terrorise its peaceful people.

A trifle unfair you may think, and you'd be right. An ancient's prophecy has decreed that you're just the right person to help them in this great graphic adventure.



```
5100 PRINT  BRIGHT 1;"READ FONTS
"
5110 PRINT '"  This mode will di
splay the newcharacter set you h
ave just      created and let you
 print them  out on a printer."
5120 PRINT  BRIGHT 1;'"SAVE FONT
S"
5130 PRINT '"  On entering this
mode you are asked to enter the
filename and starting address of
 your fonts. The starting addres
s must be no less than 32768 and
 no more than64765."
5140 PRINT '"  Information on ho
w to use the new character set w
ill then be  printed on the scre
en or if        required printed ou
t by a       printer."
5150 GO SUB 5040: GO SUB 5020
5160 PRINT  BRIGHT 1;AT 4,0;"LOA
D FONTS"
5170 PRINT '"  In this mode you
can LOAD      a character set fro
m tape that, you have saved prev
iously."
5180 GO TO 5040: RETURN
7999 STOP
8000 CLS
8010 PRINT  BRIGHT 1;AT 0,6;"***
FONT DESIGNER***"
8020 RETURN
9000 BORDER 0: PAPER 0: INK 7: C
LS
9010 CLEAR 32767
9020 PRINT AT 8,10;"PLEASE WAIT"
9030 FOR f=0 TO 767
9035 PRINT AT 10,14;768-f;" "
9040 POKE 32768+f,PEEK (15616+f)
9050 NEXT f
9060 FOR f=10 TO 40: BEEP .01,f:
 NEXT f
9070 FOR f=39 TO 10 STEP -1: BEE
P .01,f: NEXT f
9080 LET add1=32768: LET add=add
1: LET d=0: LET h=127
9090 GO TO 10
9999 SAVE "FONT" LINE 9000
```

PRO ACE WORD

PAUL BROOKES

"Wouldn't it be useful," I think to myself on the train in the evenings, "If I could make the Spectrum print in 64 column mode?" Well, that isn't absolutely true, but it's a very handy little routine to have, all the same. Just type in Program 1, *Save* it, and type *Run*. now, *Save* "P64MC" *Code* 64643,725. This will save the machine code. Next, type in Listing 2, *Save* it and *Run* it. Now, load the machine code you just produced and bingo!

To alter the text, change variable *Z$* to whatever you want printed. To alter the start position of the text, *Poke* locations 23296 and 23297 for the horizontal and vertical locations, respectively

LISTING 1

```
   1 CLEAR 64642
   5 POKE 23561,15: POKE 23562,1
: POKE 23658,8
 100 DATA 58,0,91,254,64,56,2,20
7,25,58,1,91,254,191,48,247,205,
32,253,35,78,35
 101 DATA 70,35,126,229,197,205,
102,253,58,0,91,60,50,0,91,254,6
4,32,12,58,1,91
 102 DATA 198,6,50,1,91,175,50,0
,91,58,1,91,254,187,56,12,205,21
2,252,62,186,50
 103 DATA 1,91,175,50,0,91,193,2
25,35,11,120,177,32,200,201,175,
245,135,71,135,128,50
 104 DATA 2,91,6,6,197,58,2,91,2
05,236,253,235,58,2,91,198,6,205
,236,253,1,32
 105 DATA 0,126,18,237,176,58,2,
91,60,50,2,91,193,16,223,241,60,
254,31,32,207,62
 106 DATA 186,245,205,236,253,22
9,209,19,1,31,0,54,0,237,176,241
,60,254,192,32,236,201
 107 DATA 25,24,3,42,75,92,126,2
30,224,254,96,32,7,126,17,6,0,19
5,29,253,254,160
 108 DATA 32,11,35,203,126,40,25
1,17,6,0,195,29,253,254,128,32,8
,35,94,35,86,19
 109 DATA 195,29,253,254,224,32,
6,17,19,0,195,29,253,254,64,32,6
,126,254,90,200,24
 110 DATA 228,254,192,40,224,207
,1,50,2,91,203,63,111,38,0,41,22
9,193,41,9,1,168
 111 DATA 253,9,235,175,245,71,5
8,1,91,128,205,236,253,1,0,0,58,
0,91,203,63,79
 112 DATA 9,58,2,91,230,1,71,58,
0,91,230,1,168,32,17,58,2,91,230
,1,32,5
 113 DATA 26,230,240,24,32,26,23
0,15,24,27,58,2,91,230,1,40,11,2
6,203,39,203,39
 114 DATA 203,39,203,39,24,9,26,
203,63,203,63,203,63,203,63,71,5
8,3,91,254,0,40
 115 DATA 5,120,174,119,24,17,58
,0,91,230,1,32,5,126,230,15,24,3
,126,230,240,176
 116 DATA 119,19,241,60,254,6,32
,142,201,71,230,56,203,39,203,39
,111,120,230,7,103,120
 117 DATA 230,192,203,63,203,63,
203,63,180,103,1,0,64,9,201,4,4,
4,0,4,0,170
 118 DATA 175,10,15,10,0,106,194
,228,100,232,74,66,164,64,160,14
4,96,36,66,66,66,36
 119 DATA 0,160,68,238,68,160,0,
0,0,0,46,64,0,2,2,4,4,8,40,69,17
2,164
 120 DATA 164,78,0,76,162,36,66,
236,0,46,104,172,242,44,0,78,130
,194,164,68,0,68
 121 DATA 170,230,162,68,0,0,68,
0,68,8,0,32,78,128,78,32,0,140,6
6,36,64,132
 122 DATA 0,100,154,254,218,186,
64,198,168,200,168,198,0,206,168
,172,168,206,0,230,136,202
 123 DATA 138,134,0,174,164,228,
164,174,0,234,74,76,74,138,0,138
,142,142,138,234,0,238
 124 DATA 170,170,170,174,0,238,
170,234,142,142,1,198,168,206,16
2,172,0,234,74,74,74,78
 125 DATA 0,170,170,174,238,74,0
,170,234,68,228,164,0,230,36,68,
132,230,0,134,130,66
 126 DATA 66,34,38,64,224,64,64,
78,0,96,128,198,138,230,0,128,12
8,198,168,198,0,32
 127 DATA 36,106,172,102,0,32,70
,106,78,66,12,128,132,192,164,16
4,0,8,40,10,44,42
 128 DATA 64,64,74,78,74,74,0,0,
196,170,170,164,0,0,198,170,198,
131,130,6,104,132
 129 DATA 130,140,0,64,234,74,74
,46,0,0,170,170,238,74,0,0,170,7
4,70,162,12,6
 130 DATA 228,44,68,230,0,76,68,
70,68.76,64,15,9,215,183,9.15,3,
3,3,0,0
 131 DATA 0,207,207,207,0,0,0,3,
3,3,51,51,51,207,207,207,51,51,5
1,3,3,3
 132 DATA 204,204,204,207,207,20
7,204,204,204,3,3,3,255,255,255,
207,207,207,255,255,255
1000 FOR A=64643 TO 65367: READ
B: POKE A,B: NEXT A
1005 PRINT "CODE HAS BEEN POKED
INTO MEMORY"
```

LISTING 2

```
  1 REM **DEMO PROGRAM**
  2 CLEAR 64642: LOAD "F64MC"CO
DE : CLS
  3 LET X=23296: LET Y=X+1: LET
O=X+3: LET P=64643
  5 POKE 23561,15: POKE 23562,1
: POKE 23658,8
  10 LET Z$="64 COLUMN PRINT DEM
ONSTRATION PROGRAM"
  11 POKE X,12: POKE Y,0: RANDOM
IZE USR P
  12 LET Z$=" 61 spaces
  "
  13 POKE X,12: POKE Y,6: RANDOM
IZE USR P
  15 LET Z$="COMPARE THIS SENTEN
CE IN NORMAL SIZED PRINT TO THE
COMPACT 64   COLUMN PRINT"
  16 PRINT AT 5,0;Z$
  20 POKE X,0: POKE Y,66: RANDOM
IZE USR P
  25 LET Z$="PRESS ANY KEY": POK
E X,20: POKE Y,185: RANDOMIZE US
R P
  26 PAUSE 0
  27 LET Z$="
          ": FOR A=0 TO 64: RA
NDOMIZE USR P: NEXT A
  28 LET Z$="BY USING OVER 1,LET
TERS CAN BE  DISPLAYED IN THERE
INVERSE FORM PRESS ANY KEY FOR A
N EXAMPLE"
  29 POKE X,0: POKE Y,0: RANDOMI
ZE USR P
  30 PAUSE 0
  31 LET Z$=" 215 spaces
  "
  32 POKE X,0: POKE Y,0: POKE O,
1: RANDOMIZE USR P
  33 FOR A=1 TO 400: NEXT A
  34 PRINT AT 2,0;"HERE'S THE FU
LL CHARACTER SET:"
  35 POKE X,0: POKE Y,32: POKE O
,0
  36 FOR A=32 TO 143: LET Z$=CHR
$ A: RANDOMIZE USR P: NEXT A
```

SURGERY

Sinclair Surgery

Spectrum on the blink? Rubert Goodwins has a cure

Reset with care

HELP! COULD you please advise me on a couple of points in connection with the Rotronics Wafa-drive:

After a number of crashes, I need either a permanent connection (solder or screw-on), or a reliable ribbon extender cable. Is either on the market?

Will connecting *Reset* to 0 volts have an effect similar to *New* without causing damage? I ask because, when the Spectrum crashes, all I can do is switch off the power, but this can write rubbish to the Wafa-drive heads, and ruin a sector of the wafer. I don't suppose it does the ULA too much good, either.

A.J. McCabe

PS re your August *Surgery* – Owen Dunn may be using a *Goto/sub* without using *Restore*. S. Charles may be using 0 and 1 instead of CHR$(48)&(49)

PPS This letter written with **The Last Word** – good innit!

● *There are a number of extension ribbons available. Try and get one which is as short as possible, otherwise problems can occur when using the Wafa-drive. Resetting the computer by pulling Reset low is a perfectly safe way of extricating yourself from a crash, but the entire computer is cleared, unlike* New.

Nidd Valley make a combined extension/reset button for around a fiver: try 0423 864488

PS Ta.

PPS Does it do automatic PS's then?

A funny computer?

YOU SEEM a helpful bunch. Can you help me with this collection of problems?

Can the Midi output on the 128 drive an amplifier directly?

In 128K mode, *Inv Video* (or cursor, or graphics, or extended mode) and 1 make the menu appear. Have I got a funny computer?

I'm using a Serial 8056 printer, as sold by Dixons, and some of the commands to cancel the special features don't seem to work. I'm using the software given away by Dixons with the printer, which nobody seems to know about.

Can I have a free **Boggit** tape?

Answer this lot, and I'll buy your mag for the Rest of Eternity.

Michael Lambert
Wallsend
Tyne and Wear

● *What an offer! 1) No. The MIDI output is like the RS232 output for a printer, it doesn't produce anything itself, but commands a synthesiser to make a noise. 2) The 128 looks for Caps/Shift and 1 to produce a menu – as Inv Video (and the rest) all have a Cap Shift built in, the computer gets fooled. 3) The most reliable way of driving that particular printer is to send a reset-printer command followed by the effects you want. The cancel commands can be 'eaten' by the Spectrum, as they look similar to internal controls that it use. 4) No. Tell the rest of Eternity to buy their own copy of the magazine*

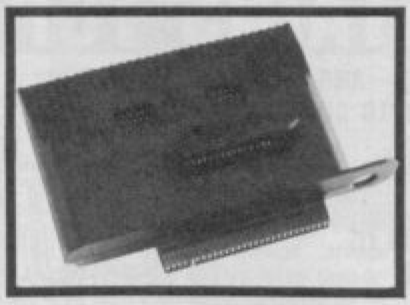
TV problems in Brazil

FOR THE last two years I have been working on a ship which is based in Brazil. I have been using a very old television to run my Spectrum, partly for recreation and partly for running my own programs on stability etc. My television has now died and the only replacement I can find is an American television, which of course has the USA NTSC (Never Twice The Same Colour!) colour system and different standards.

Can you or any of your readers advise me on any way that I can adapt either the Spectrum or the television to give a normal picture and colour. Right now I have a reddish picture which stretched in the vertical!

P C Collinson
Whitby
Yorks

● *Unfortunately, the answer is no! The Spectrum cannot easily be modded to USA standards. Likewise USA TVs cannot be adapted to European standards. All isn't lost, however. If you can buy a Spectrum to RGB adaptor (try Transform, (UK) 01-658 6350) then an American RGB monitor will probably work (or can be easily modified to cope with the different line and frame rates). Failing that, you'll have to buy either a UK TV, or an American Spectrum (known as the Timex/ Sinclair TS 2068)*



Peripherals beware!

I READ in SU some time ago a letter in *Surgery* saying how to connect Interface 1, Opus Discovery 1 and Ram Turbo interface to a 128K Spectrum. You said you can't. I have seen in Boots in Brent Cross an interface which gives a gap between the Spectrum and Discovery so you can connect peripherals.

D Aminoff
Hendon
London

● *Thanks for the info, but beware! Although such a device can let you hook up more than one add-on at once, there's still no guarantee that they will work together. Interface 1 and Discovery won't, no matter how you plug 'em in*

Unstandard standard

I'VE GOT a Spectrum 128, which I bought thinking that it would plug into my Ferguson MC01 RGB monitor. I was disappointed to find that the RGB port on the Spectrum is non-standard – it seems that there's an extra line to get bright, or high luminance RGB. I've heard of an RGB monitor with this facility. Do I have to buy another interface? I hope not!

C M Howland
Bristol

● *Ah, the joys of standards! There are two main sorts of RGB: TTL and linear. With TTL, the Red, Green and Blue signals are either on or off – there are no levels in between. This gives a maximum number of colours of 8. Linear is more subtle, as each of the three signals can be at any level, and there's no limit to the number of colours obtainable. The Spectrum uses a modified form of the TTL RGB system, with an extra line called Bright to double the number of colours. If you've got a linear monitor, then you have to mix this signal in with the other three via a network of resistors and diodes. I'm not aware of anyone who makes such a network – if anyone does, details would be appreciated. If you just have a TTL RGB monitor, then you're stuck with eight colours, I'm afraid.*

Circuit boards and upgrades

Two similar requests with one answer:

I AM looking for a copy of the printed board circuit diagram used in the Spectrum Plus.

Anthony Wong
Victoria
Australia

I WISH to upgrade my 48K Spectrum to Spectrum Plus. As Sinclair Research does not now appear to operate from Camberley, since the Amstrad take-over, can you please advise me if there is any recognised firm who will undertake this.

C A Hutchinson
Suffolk

● *All of the Sinclair spares and servicing side have been taken over by the company Amstrad use – CPC. They should have the upgrade kits, and the Spectrum circuit diagram. Contact them on 0772 555034*

An automatic Microdrive

I'VE JUST bought a Microdrive and Interface 1 off a friend, but am having some problems with it. Sometimes when I insert a cartridge or take one out, the Microdrive starts. It sometimes starts when playing games, occasionally crashing the game. Could you tell me how to cure this irritating problem. I've checked the edge connectors and they seem to be fine. I've also heard that by adjusting a screw inside the Microdrive you can format cartridges up to a 100K minimum. Is this true? And if so, how do you do it?

Craig Jones
Cathays
Cardiff

● *The problem lies within the Interface 1. If you've cleaned the edge connectors and seated the unit properly on the back of the Spectrum and the problem persists, then it's most likely a flaky chip, I'm afraid. There are no adjustments of any sort inside a Microdrive, still less one that increases the capacity of a cartridge! You can increase capacity by slowing down the motor, but as that reduces reliability and increases access time, as well as making your drive incompatible with all the others. I wouldn't recommend it* ■

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PREVIEW



MADNESS

Trundle-trundle wheeeeeeee! How many times have you wished, marble trundlers, that you could get your own back on the one person you know who is just that little bit better than you at Marble Madness? Now's your chance!

Melbourne house has put together the game designer to top them all. You can sit for hours, fiendishly cackling away, as you create more and more bizarre scenes for the hapless player to roll through.

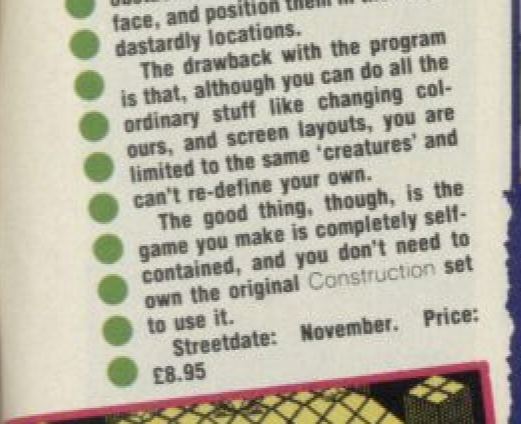
The program works in much the same way as graphic screen designers. The only difference is that instead of putting squidgy blobs and lines on the screen, you lay down modules, like paving stones, on which the marbles will roll.

Then, once you have created a plateau, you can select the various obstacles which the player will face, and position them in the most dastardly locations.

The drawback with the program is that, although you can do all the ordinary stuff like changing colours, and screen layouts, you are limited to the same 'creatures' and can't re-define your own.

The good thing, though, is the game you make is completely self-contained, and you don't need to own the original Construction set to use it.

Streetdate: November. Price: £8.95



TAKE, TAKE

Weird games are back in fashion. After last year's brief flirtation with Minter Strangeness (and/or charm), everything became decidedly normal. Double Take – from Frankie and Shadowfire authors, Denton – looks set to shake everyone up again, though. The game, from Ocean is based upon the classic struggle between good and evil. Imagine a parallel dimension to our own, which is thoroughly evil, with many bad aliens, and a whole lot of negative matter. As time progresses, the gap between the two dimensions grows, allowing more matter to interchange, and generally putting everyone in a bad way.

Because it's been programmed by Denton, it seems it could turn out to be one of the real biggies. Much is promised of the graphics which are called 'state of the art 3D' and may actually be.

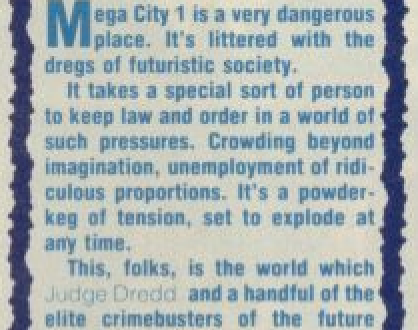
Streetdate: November December. Price: £7.95

JUDGE DREDD

Mega City 1 is a very dangerous place. It's littered with the dregs of futuristic society.

It takes a special sort of person to keep law and order in a world of such pressures. Crowding beyond imagination, unemployment of ridiculous proportions. It's a powder-keg of tension, set to explode at any time.

This, folks, is the world which Judge Dredd and a handful of the elite crimebusters of the future must keep under control.



Melbourne House has the rights to the fantasmagorically marvelous comic strip in *2000AD*. The story is prime computer-game material. Clean up the city in a fashion which resembles the Dirty Harry school of Public Relations.

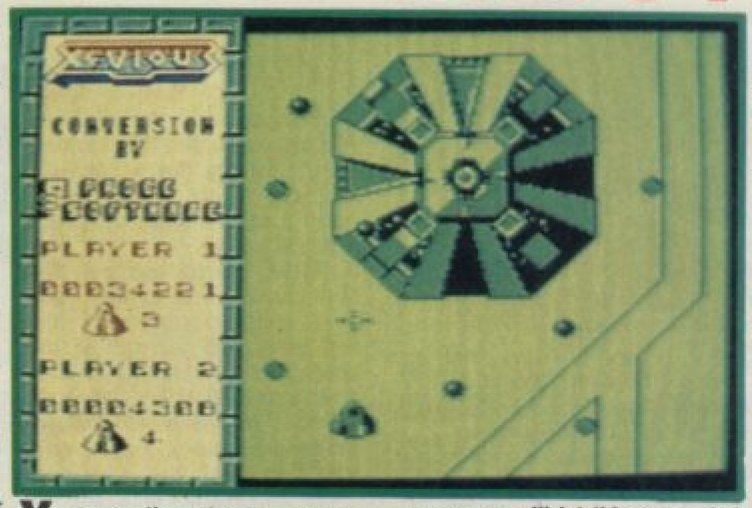
In the game, you get to belt around the streets wasting perps (perpetrators) with either high-explosive, heat-seeking or armour-piercing shells. Shooting innocent bystanders is to be avoided where possible.

In your fight against injustice, you'll have to deal with Robodogs, Sattelats and other sub-human beasties.

It's tough as a Judge, can you take it?

Streetdate: November 27. Price: £8.95

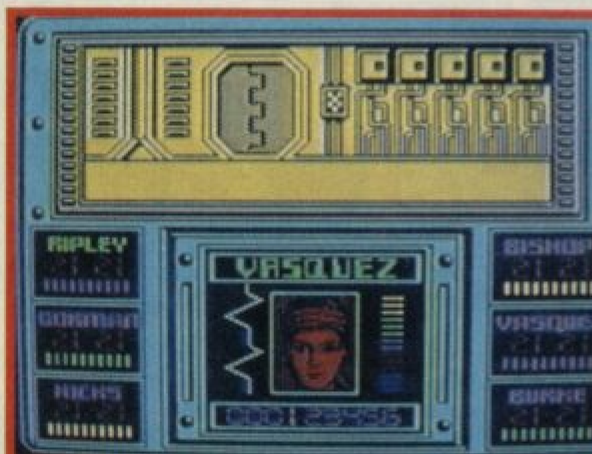
XEVIOUS



Xevious, the classic arcade shoot-em-up has been converted from coin-op to cassette by US Gold.

There's really not an awful lot to explain about the 'concept' of the game, so we'll let this screenshot speak for itself. It's basically a bit like Lightforce – a top-down scrolling scorcher.

Streetdate: December. Price: £7.99.



This, people, is Aliens, from Electric Dreams, and it's nearly finished.

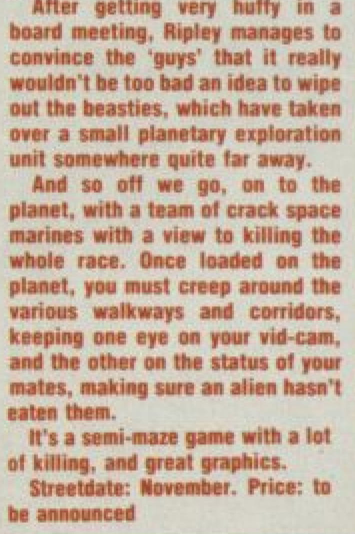
The plot is as follows: Ripley, after being asleep with Jones the cat for fifty-seven years wakes up, only to find the whole space station full of loony businessmen, all of whom are completely stupid, and not the least bit concerned about the alien threat.

After getting very huffy in a board meeting, Ripley manages to convince the 'guys' that it really wouldn't be too bad an idea to wipe out the beasties, which have taken over a small planetary exploration unit somewhere quite far away.

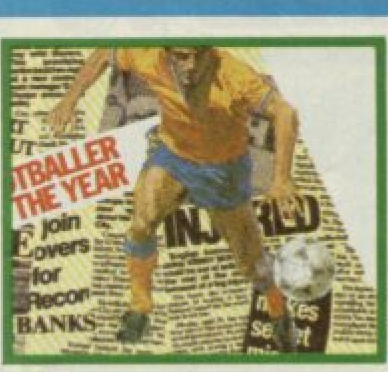
And so off we go, on to the planet, with a team of crack space marines with a view to killing the whole race. Once loaded on the planet, you must creep around the various walkways and corridors, keeping one eye on your vid-cam, and the other on the status of your mates, making sure an alien hasn't eaten them.

It's a semi-maze game with a lot of killing, and great graphics.

Streetdate: November. Price: to be announced







Footballer of the Year, from Gremlin, takes the idea of the perrenially successful Football Manager and turns it inside-out. Instead of charting the success of a team, you take the role of an individual player moving from unemployed boot-boy to Footballer of the Year.

You begin as a lowly footballer, and must work your way through the ranks of the mediocre, in an attempt to become famous enough to attain not only a drink problem but also eventually, a contract as a TV sports presenter.

Choose from any of the five divisions (1-4 and Euro) and follow your team to the matches. During the game, it will be necessary to actually play an arcade-style footy game in order to score those vital points allowing progression up the scale.

Will you be lucky enough to be spotted by the ruthless talent scouts? Who knows? Who's bothered?

Streetdate: November. Price: £7.95

SHAOLIN'S ROAD

Wahngsheeee! Noshi, noshi woooooph. Ah! That's better. There's nothing like a good old gang war to get the circulation going. It can get pretty hairy here in the SU offices.

I mean, it's all very well The Edge claiming that its new game Shoalin's Road is going to be the best game ever invented in the history of the world (well, I'm sure it will have to be or why else would it bother to release yet-another-martial-arts game), but exactly what does it do?

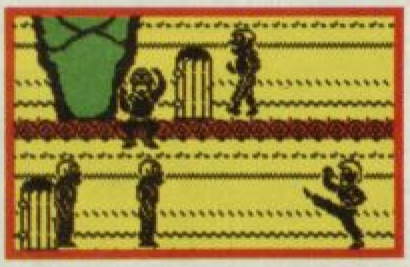
The graphics are nice, and the movement is very smooth. Well, judge for yourself from these screen shots.

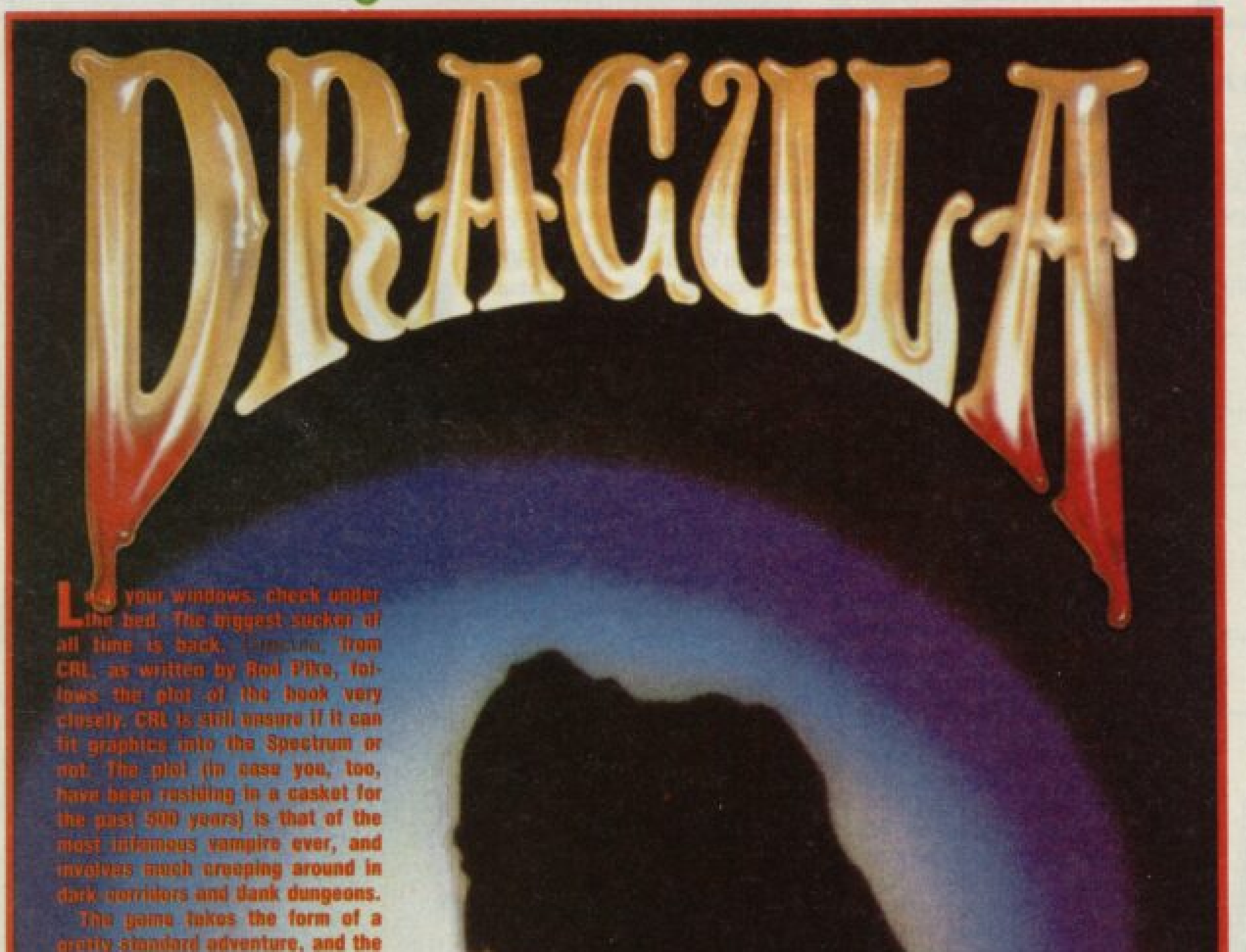
Just in case you haven't seen the game in the arcades, then I'll tell you that Shaolin's Road is an astronomically famous arcade game by Konami, in which you expend a lot of energy beating little animated characters to a graphical pulp.

Streetdate: Late November. Price: £7.95









L[illegible] your windows, check under the bed. The biggest sucker of all time is back. Dracula, from CRL, as written by Rod Pike, follows the plot of the book very closely. CRL is still unsure if it can fit graphics into the Spectrum or not. The plot (in case you, too, have been residing in a casket for the past 500 years) is that of the most infamous vampire ever, and involves much creeping around in dark corridors and dank dungeons.

The game takes the form of a pretty standard adventure, and the company responsible are doing their best in order to give it a big build up. "We don't think you'll find it very funny," it says in the blurb. I'm not sure that's a good sign.

Streetdate: November. Price: £8.95

SHADOW SKIMMER

Shadow Skimmer, from the Edge could be one of the best games to appear this year – vaguely in the Lightforce no colour-clash scrolling blast mould.

In years to come, vast space stations will be constructed. Eventually, they'll be self-supporting, and therefore able to drift through space indefinitely.

Of course, each ship needs some form of defence. As everyone knows, space is bloody big, and there are a lot of very unpleasant things out there. Each ship has an amazing defence system, incorporating many, many robots, force-fields and other mystery objects.

Every couple of thousand light years, it's necessary to give the space-ship the 'once over', in order to make sure nothing nasty has grabbed hold and is hitching a free ride.

You are lucky enough to have this job, and venture outside, to have a look round. The defences are turned off so as not to blow away the mechanic, and everything is safe. Suddenly, however, there is a malfunction! The hatch jams. You can't get back into the ship. And the defences are re-activated...

Try to escape your own ship's defences in this 4-way scroller super-duper shoot-out.

It looks well-impressive.

Streetdate: December. Price: to be announced

FRUITY FERTILIZER

Agent Orange is not – as you may be forgiven for thinking – the infamous chemical used to burn down trees and people in Vietnam. It is the latest game from Argus Press.

Saving themselves (just) from receiving our vote for the most tasteless, unpleasant game of the year, Argus has created a game

screen from the C64



based on fertilizer in space. Taking the role of Agent Orange, you must defend your world's crops against this horrific alien onslaught.

It looks rather similar to most other plan-view arcade games, and is still in the early stages.

Why Agent Orange? Well, people certainly remember it.

Streetdate: January. Price: £8.95

Sky Runner, from Cascade is the sequel to its No 1 ACE.

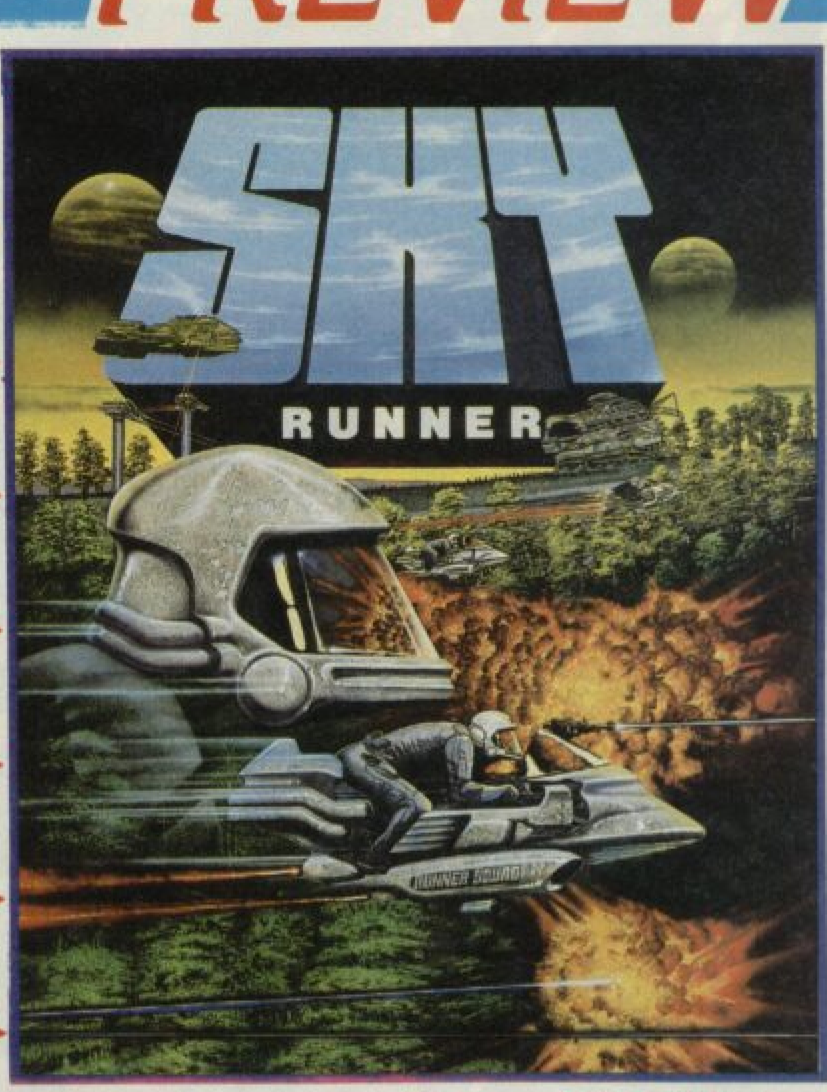
Ian Martin, the programmer of both games says the idea for the game is a mixture of *Return of the Jedi* and *Dune*. The plot, goes thus: crime increases, the division between the poor and the rich grows wider and governments of some worlds see control drugs as the only possible means of retaining, well, control.

Although people were perfect citizens when under the influence of the drug, it was also discovered that they tended towards lethargy. They were in short – incapable of work. Some other means of control had to be found. After much searching a substitute was discovered. Guess what. It wasn't a Yops scheme.

Many planets, surprisingly, found the idea of any form of brain control completely unacceptable. You, however were outraged, and get recruited by the Runner Squad, to stop the harvesting of Sky – the new drug. So much for the plot. The game had better be better. (There are so many SF pot-boilers around these days it's frightening.)

The game, at this stage, looks closely based on the tree-racing sequence in *Return of the Jedi*, in which the hero must steer a hovering motorcycle through a thick forest. Shades of 3D Death Chase? Hmm. We'll see.

Streetdate: November/December. Price: £7.95



ELITE'S IKARI WARRIORS

Ikari Warriors, from Elite looks set to be as successful as Commando before it. Set in sticky jungle somewhere where a war still rages, the game centres on a good deal of killing, but has strategy elements as well.

Warriors is based on the astoundingly popular arcade coin-



op of the same name, and features a damned natty two-player option, where the players – either both on keys, or one on keys and one on joystick – can work together in a bid to wipe out the approaching troops.

The game is a top-bottom scroller, which tends to make it look rather like a lot of other games, but allows the little guy you control to leap into a tank, providing a good deal more protection than his khaki romper-suit.

Despite the fact it sounds pretty elementary, it has some strategical elements in a bloodthirsty sort of way.

Elite describes Ikari Warriors as "Commando with knobs on" and who am I to argue.

Streetdate: December. Price: £7.95



ZOOMY GOONIES

Goonies – US Gold's tardy conversion from the C64 – is a game of teamwork. As in the original Spielberg movie from which it's taken, the plot involves a number of all-American kids in a search for One Eyed Willy's treasure.

During the game, you guide the members of the group through various screens, avoiding the diabolically absurd Fratelli gang, and other items which all-American kids come up against; poisonous slime, flying skulls, hissing steam and so on.

What about the teamwork? Well, Goonies (the collective noun for children about which bad adventure movies are made) are always getting into the whackiest of scrapes, and they are far too expert in the field to give up. And you've got to guide them through the screens.

Essentially Goonies is a straightforward arcade adventure, but novel in the way you can distract some nasties with one player, allowing another to escape.

Streetdate: November. Price: £7.99

HAVE A BREAK – HAVE A JAILBREAK

Woooo-a-ooo! Break out the rubber bullets, Konami is issuing Jailbreak. The prisoners have captured the warden, and are running amok through the streets, causing untold havoc. What must be done? How can they be stopped? Who shall we call? Guess.

Yus. It's your job, as one of the America's finest to 'protect' the public from the anti social elements. As everyone knows, the most effective way to make a rescue bid for an important member of the justice system is to blow away everyone in sight. This is essentially the whole game. Konami are eager to point out that, although you will be spraying the crowd of convicts with bullets for a large proportion of game time, you never actually kill anyone. Nice to see a humanitarian slant on the thing. Bring on the social workers.

Just like your fave TV show, you can shoot them full in the chest (the prisoners, not the social workers), and they will lie very still on the floor. But they're not really dead. Honestly.

Still, it'll be interesting to see how Konami, breaking away from the Imagine label and marketing its own games for the first time, manages.

Streetdate: November. Price: £7.95

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DEFCOM? WHAT?

Coming your way soon from Argus is Defcom. The infamous but utterly sensible, boys, honest Star Wars defence policy (SDI) has become a reality.

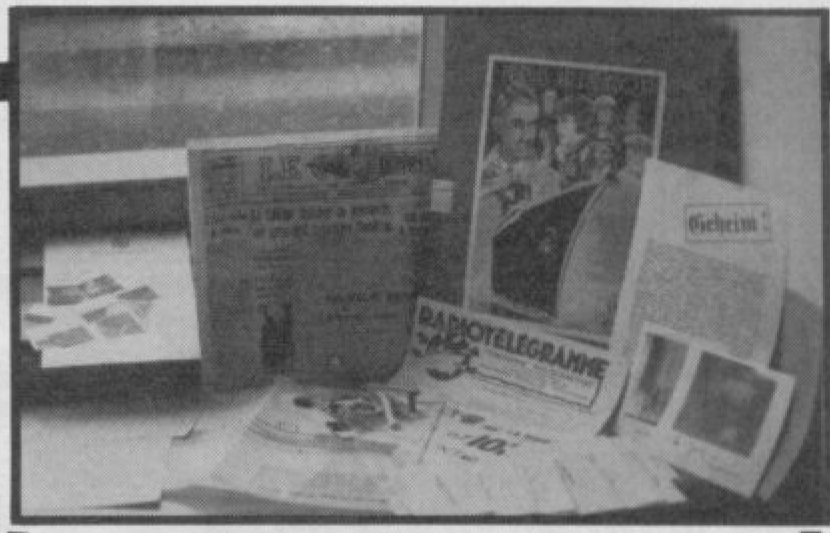
While the world goes about its business, an alien force is slowly but surely moving ever-closer. Eventually, they storm the (completely defensive but laser packed) satellites, and begin lining them up, with a view to doing extremely unpleasant things to the entire population, before anyone is any the wiser.

Your task (wot, again! yo) is to save the earth from alien destruction. The game-play is very simple indeed, incorporating little more than left/right movement. Apparently, it is a 'classic shoot'em-up' (always a bad sign), although we have considerable reservations. The space-ship swings from left to right over a rotating earth, while aliens swoop around. It doesn't sound very exciting at this stage, does it?

Streetdate: November/December. Price: £8.95



▲ C64 screen



ATLANTIC MURDERS

Crikey! What on Earth is this??

Infogrames must be trying to finish us off. It's just dropped a paving-stone through the roof of *SU*, which crashed on to my desk, narrowly missing our communal type-writer,

Hang on. It isn't a paving-stone after all. In fact, it turns out to be all the bumpf that is to be included with its new game Murders on the Atlantic.

The game seems to follow in Infocom's footsteps. Inside the package, you will get some torn-up pieces of paper (wooo!) absolute squillions of business cards of the people whom you will encounter on your voyage, a telegram and a squidgy bit of plastic which I'm sure is very important.

Then there is the old newspaper, a few more pieces of paper and the folder itself.

Despite the fact all this groovy gear is remarkably good, no-one seems to have seen an ounce of the actual game. We're not really that interested, but it would be nice.

Streetdate: November. Price: £14.95

WINTER WONDER

Ever wanted to take your Spectrum to the Himalayas? No? Well, Incentive seems to think you should. Winter Wonderland, created with it's splendid utility, the Graphic Adventure Creator centres on the exploits and escapades of an Anthropologist. It's interesting as the first program created with GAC to be put out commercially. It'll be interesting to see how it matches up to a good Quilled effort.

After you receive an exciting message from your Russian friend, Kirov, informing you of a discovery sure to rock the foundations of the anthropological world, you set off for bumpy Tibet, in order to discuss the matter further.

There is no sign of Kirov at the hotel, and you decide to take a trip to the dig to have a look around, and see exactly what all the fuss is about. On the way, you make the unfortunate discovery that the Cessna aircraft in which you are travelling is seriously short of flying ability.

It's out in time for Christmas so we'll find out if the Quill's days are numbered (whether the writing is on the wall for The Quill etc etc – I laughed till I stopped).

Streetdate: December. Price: £7.95

DIEGO'S HANDBALL

Goalkeeping. Think about it. Not very exciting is it? Well, actually, a lot of people are getting more than a tad worked-up over Peter Shilton's 'Handball Maradonna', from Argus.

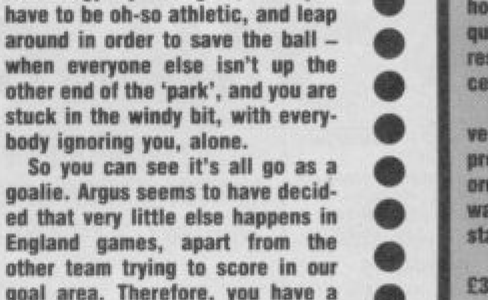
In the game, you take the role of the much maligned 'goalie', in the front line of soccer action.

As everyone knows, being a goalkeeper is probably one of the most demanding jobs in the game. I mean, it's necessary to run about all over the place, within the white box-thingy by the goal, and you have to be oh-so athletic, and leap around in order to save the ball – when everyone else isn't up the other end of the 'park', and you are stuck in the windy bit, with everybody ignoring you, alone.

So you can see it's all go as a goalie. Argus seems to have decided that very little else happens in England games, apart from the other team trying to score in our goal area. Therefore, you have a lot of work to do.

As time goes on, you are presented with more and more difficult opponents. In the early stages, the shots are almost all saveable, though soon penalties, corners and free-kicks are brought in to play, and you get quickly thrashed. When Maradona comes in is far from clear – still singing his little heart out one supposes. Surely Argus couldn't have called it 'Handball Maradona' in the hope it would boost sales? No, of course not.

Streetdate: November/December. Price: £8.95



▲ C64 screen

SERIOUS STUFF

Chezron Software makes its first foray into SU territory with two utilities, Catloader and Bonabanner.

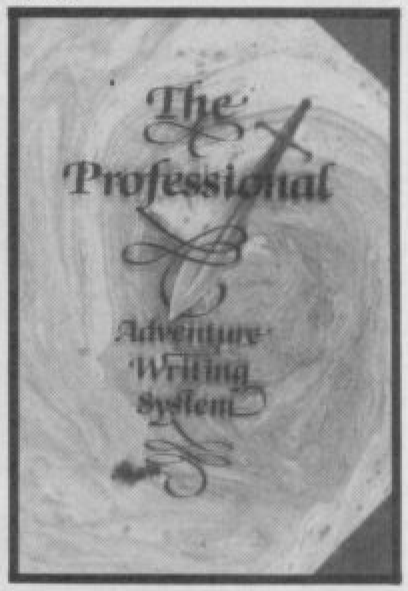
The first program is a Microdrive utility, allowing you to create a catalogue of all of the files contained on a Microdrive, which will *Load, Run* and do all those other things which have until now proved to be a skull-crushing bind.

The second program is more immediately impressive, being a graphics utility.

Everybody knows that storing graphics on the Spectrum is pretty ruddy uneconomical. It takes a whacking 7K to fit a hi-res screen into memory. Bonabanner will fit a picture into 1.5K Sneaky eh? And how does it do it? Well, we're not quite sure, but it looks as if some resolution is lost during the process.

Still, it certainly seems to be very economical on memory. Both programs are available by mail order only. Info from Chezron Software, 605 Loughborough Road, Birstall, Leicester.

Streetdate: October. Price: £3.50 each



◆ Gilsoft that bastian of the home-made text adventure, based in Barry, are back with a vengence. First entering the scene with their now-famous Quill, many eons ago, they are now back with PAW (the Professional Adventure Writer).

The program boasts a powerful text interpretation input system – 'parser' to those in the know – and the option to create semi-smart characters.

The first feature allows you to type in such bizarre things as: 'Pick up the large key, and then get the apple with the spatula.' (Or something like that). You do, of course, have to instruct the program first of the verbs, nouns, adverbs, adjectives and prepositions. Just as well then the PAW is capable of text compression.

PAW also allows you to create graphics for the locations in your game, and designates a different weight for each object, etc, etc. Sounds like the 'super Quill' everyone has been waiting for.

Pretty impressive stuff.

Streetdate: November. Price: £22.95

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STOP PRESS STOP PRESS STOP PRESS STOP PRESS Commodore has knocked £500 pounds off the Amiga. This means that the basic system now costs £1,000 and is only 500% too expensive. MESSAGE ENDS . .

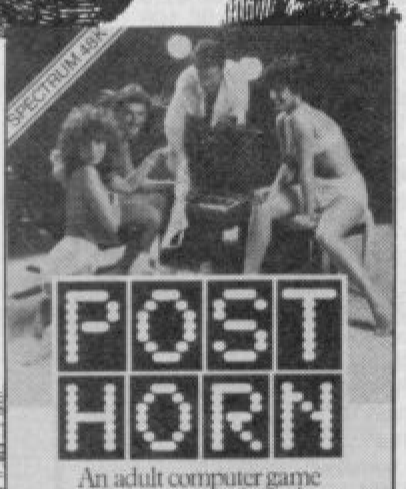
Gremlin sometimes wonders about the Universe. It's a pretty strange place. Irrefutable evidence for the existance of God can be deduced from the fact that the THiNGi – a piece of plastic with Velcro on one end – has been named Business Product of the Year. An unseen hand must be at work.

Gremlin has seen the THiNGi at many a computer show and sniffed hauntily at the obvious lunacy of the idea. The fact that there are 'left- or right-hand versions' seemed merely to reinforce *Gremlin's* opinion that here was this year's version of The Stick (a joystick marketed by ELR that looked like a tube, used mercury switches and worked well with everything except commercial computer games – it wasn't successful)

Hot news. A sneak preview of the *Eastenders* game from Macsen software. Based closely on the TV series the game features many of the lovable characters from the everyday story of drunks, adulters, jilted asmatic grooms, rock groups and gay designers.

The above picture, proof apparently (according to Macsen) that the game is 'ready to go', would seem to indicate that a good many of the characters will be in racing cars. Perhaps Dirty Den will be in a taxi





From time to time software houses have tried to mix computer software and, well, freetime social activities between consenting adults.

Soho Sex Quest was one example (over which we'll draw a discrete veil). Recently however *Gremlin* has unearthed the amazing **Post Horn** from Satyr software.

This game in Basic is described as a 'saucy' (one of the great misleading words of all time) version of Postman's Knock. Basically it's a sort of betting game where people often end up taking their clothes off. As you might suppose the game is absolutely terrible and features a Commodore 64 in the picture (among other errors). Who are these people in the picture? Who are Satyr software? Why has one of them got his sox on? Can anyone top this for tacky? *Gremlin* would like to know.

GREMLIN'S BIG EIGHT

Gremlin's Top Eight (couldn't think of ten) least successful computers as measured by the time between initial promotion of the new product and shut down of all production. (Maybe not in order.)

No 1: wrong star sign

Aquarius – sqidgy keys made a come back as did a tiny memory and appalling games. It flopped.

No 2: couldn't cut it

Sord M5 – invaded from Japan on its own before MSX failed just a miserably

No 3: in the net

Ace – no colour, funny keyboard and an unconventiona language (Forth) make this a sure-fire flop.

No 4: rotten apple

Adam – a powerful machine derived from the Colecovision games console, included good sound and graphics and a printer. Supported by about four pieces of software, not supported by public.

No 5: turned green

Dragon 64 – beefed up Dragon 32 designed to turn ailing machine around, retained unique 'green-look' graphics. Dragon's accountants turned green too. Not successful.

No 6: boldly went

Enterprise – tried hard, spent money on promotion, good sound and graphics – looked like a halibut.

No 7: Russian hit

Memotech – great machine, looked strong, compatible with lots of things, great reviews. Sold well in Slavic countries.

No 8: cat-calls

Lynx – powerful, quasi-business machine, software like **Oh Mummy!** Relaunched repeatedly but never made the big time

The mighty L-shaped Aquarius computer with low-res graphics, several K of memory and software that came in cereal boxes. . .



Ordinarily letters complaining viciously about *Sinclair User* are consigned to the waste basket and we send around the EMAP heavy-squad to help them revise their opinions.

This one was special though. It comes from South Africa from somone who signs themself *'Sinclair User* hater'. It complains about various things and issues the terrible threat "If you don't improve I'll send PW over to sort you out" (political note: a reference to Mr P W Botha, Prime Minister of South Africa: a cheerful little country where some people aren't treated in quite the same way as other people.)

Some threat. 'Sinclair User hater' says: "I might carry on buying your magazine if you buck up". Tell you what – we'll improve our magazine if you improve your country's political system.

"I would have done *Lear* you know, actually I'm an actor, people don't realise how difficult this sort of job is. . . etc etc



The whacky children's presenter and the 'explain it to me' women laugh at a Spectrum. Note BBC product in background.

Gremlin's thoughts turned the other day to television and in particular the utter awefulness of all TV programs on micros, particularly those on the BBC. With the exception of the nearly acceptable Database (as was) computer TV programs can be classified in the following way. There are those programs where the producer thinks it should be like *Blue Peter, (Micro Live)* and those where he/she thinks it should be like *Top of the Pops*.

Then there are very, very serious ones made on tiny budget where 'Mac' explains how a micro can improve your cash flow.

The *Blue Peter* approach is marked by a patronising attitude to games ('this is rather amusing') and lady presenters who play the dumb person and have things explained to them – 'well you see, Lesley, this is just like your microwave at home'

'Oh yes I see it's quite simple really – even I can understand it'.

This is particularly irritating when mixed with excessive patronage of a machine almost nobody wants to buy (The 'humble' BBC Micro; and continuous mocking of one of the machines a great many people have bought, ie the Spectrum.

The *Top of the Pops* approach is usually found on the commercial channels and is exemplified by reviews of very old games by very young children who have never touched a computer before:

"And what do you think of the game?"

"It's not bad, I like the little man."

"Yes, he is nice isn't he."

"So how many would you give it out of ten."

"I should think about 8."

"Eight! Well that's the view of our expert on **Doomdark's Revenge.** Thanks Wayne."

Gremlin has just watched an episode of the new series of *Micro Live* in which a terrible game for the BBC got around five minutes of coverage. This along with no coverage at all of a zillion major releases on the Spectrum which would have merited it.

Perhaps those who share *Gremlin's* concept for the current state of TV micro programs would like to write in. . .

Gremlin

CAPTION COMP NO 2

Response to last month's inaugeral caption competition was surprisingly good and produced some entries that actually made *Gremlin* laugh (an unpleasant sight at the best of times).



In the 'close but no cigar' category comes this wonderfully bitchy offering from Julian Dawson of Hamfirth: "The Ultimate in computers. . . and look what happened to them"

Well done also to Nigel Reed for "Perhaps we can make the keys fall out of our *next* computer too"

Also pleasing was the cruel: "Yes folks, I used it to design the C5", that from R Wilkinson from Rugby.

The winner, however, was Simon Wyn Beeson from Amlwich whose entry seemed to say so much about the way the QL was launched: ". . . and here's one I prepared earlier" He gets £20 as soon as we can persuade the accountants to hand it over. Comiserations to Jamie Reardon who had a similar idea but whose entry got to us later.

This month's picture requiring a caption is of 'famous' Feargal Sharkey with some other kind of computer. What is this international Pop Star thinking? £20 for the most amusing suggestion:



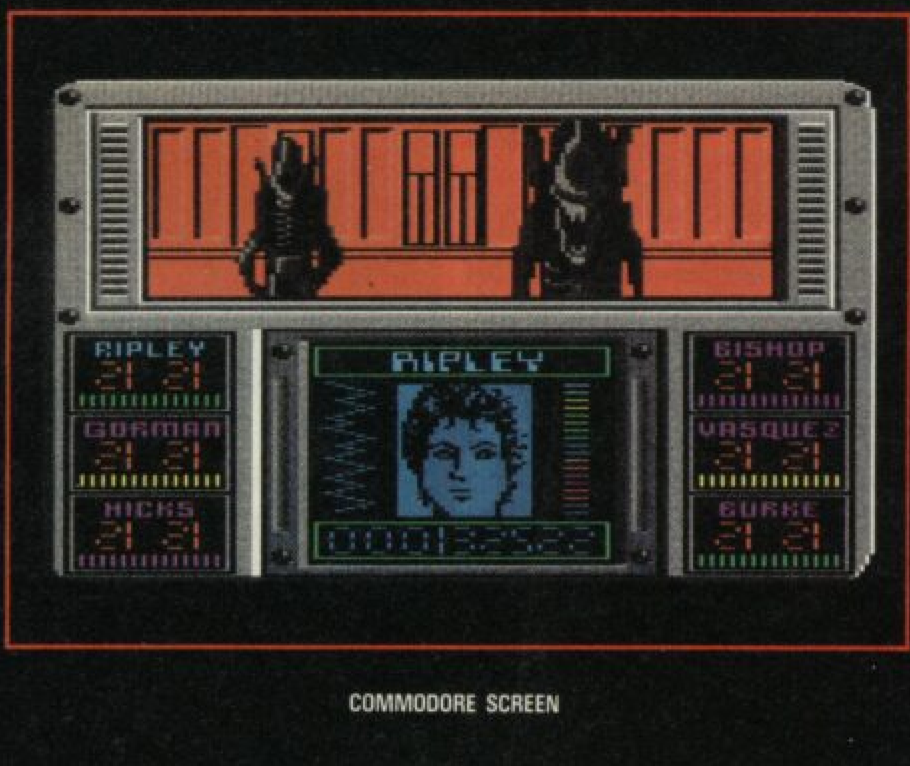
Send your offering to Gremlin Caption Competition No 2, 30/32 Farringdon Lane, London EC1R 3AU. Entries must reach us by 25th November which ain't givin' you long . . .

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